ViaLiteHD
SNMP and web controller module

User Guide

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Pulse Power & Measurement Ltd, 65 Shrivenham Hundred Business Park, Watchfield, Swindon, Wiltshire SN68TY, UK
Tel +44 (0)1793 784389 Fax +44 (0)1793 784391 Email sales@ppm.co.uk Web www.vialite.com

Instrument Care and Safety Information

*Please read the whole of this section before using your **ViaLiteHD** product. It contains important safety information and will enable you to get the most out of your Fibre Optic Link.*

Electrical Safety

The ***ViaLiteHD*** rack chassis is a Safety Class 1 product (having metal chassis directly connected to earth via the power supply cable).

When operating the equipment note the following precautions:

- Hazardous voltages exist within the equipment. There are no user serviceable parts inside; the covers should only be removed by a qualified technician.
- There are no user replaceable fuses in the rack chassis mounted equipment. Replacement should only be carried out by a PPM technician.
- The rack chassis earth stud SHOULD be connected to the safety earth.
- When using a 2 pin power supply cable the rack chassis earth stud MUST be connected to the safety earth.
- The ***ViaLiteHD*** Power Supply Modules do not have an isolating switch on the mains voltage inlet. For this reason, the ***ViaLiteHD*** Rack Chassis must be installed within easy reach of a clearly labelled dual pole mains isolation switch, which supplies the equipment.

ESD Precautions

The **ViaLiteHD** RF Fibre Optic Link is equipped with high frequency active electronics, without the correct handing they will be susceptible to damage.

Precautions for handling electro-static sensitive devices should be observed when handling all ***ViaLiteHD*** modules. Technicians should ensure that they use effective personal grounding (i.e. ESD wrist strap etc.) when servicing the equipment. Any equipment or tools used should be grounded to prevent static charge build-up. Good practice should be observed at all times for reference see relevant standards.
EN 61340-5-1, “Protection of Electronic Devices from Electrostatic Phenomena – General Requirements”

Optical Safety

The ***ViaLiteHD*** RF Fibre Optic Transmitters, Dual Transmitters and Transceivers contain optical sources (usually laser diodes) operating at nominal wavelengths of 1270nm to 1610nm.

These devices are rated as EN60825-1:2007 as CLASS 1 radiation emitting devices. A class 1 laser is safe under all conditions of normal use.

When operating the equipment note the following precautions:

- Never look into the end of an optical fibre directly or by reflection either with the naked eye or through an optical instrument.
- Never leave equipment with radiating bare fibres – always cap the connectors.
- Do not remove equipment external covers when operating.

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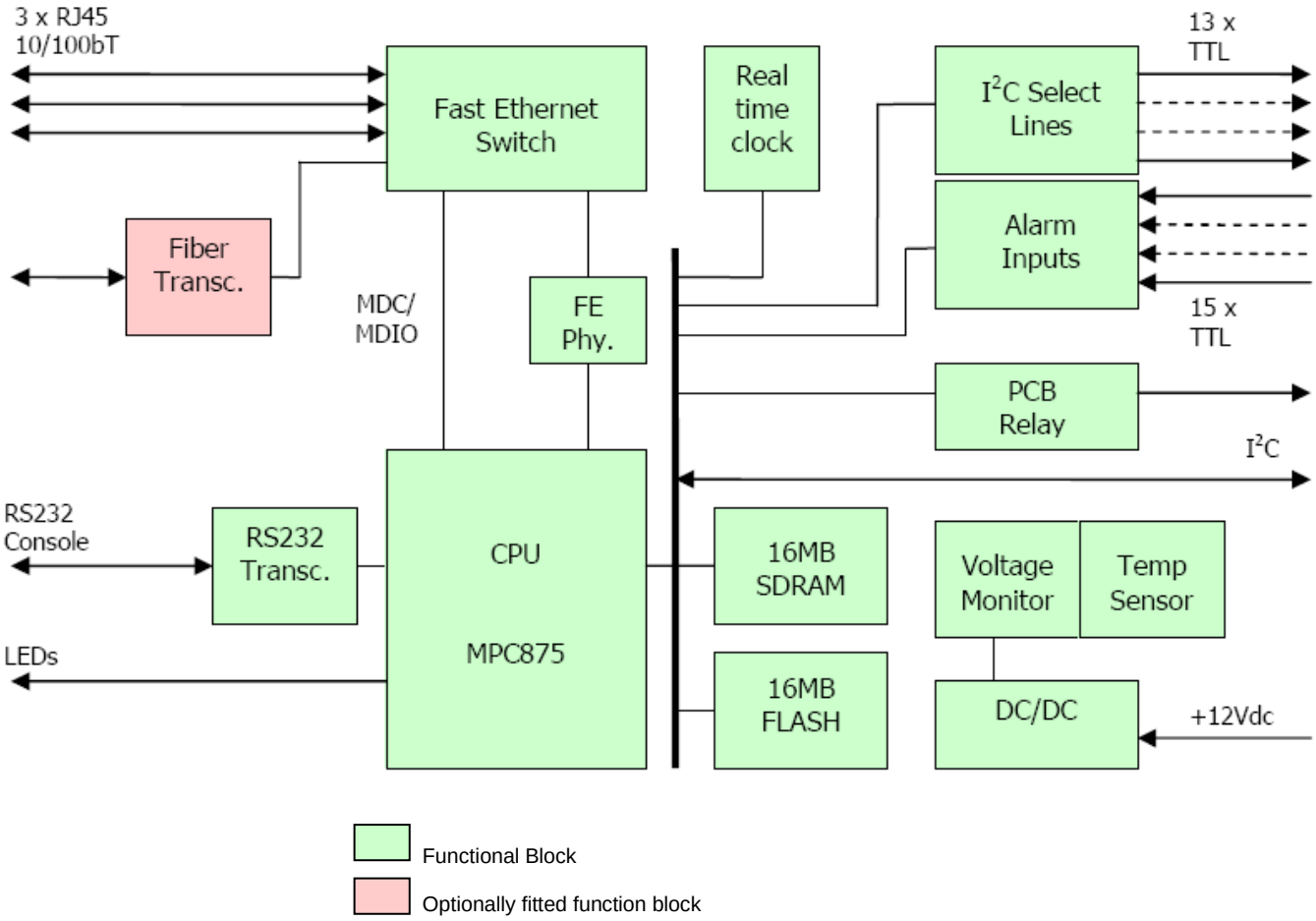
1 Introduction

The ***ViaLiteHD*** SNMP and Web controller module is used to manage ***ViaLiteHD*** equipment, both monitoring and controlling modules. It offers multiple switched 10/100 BaseT copper RJ45 Ethernet interfaces at front and rear and may optionally have a rear 100 BaseF optical interface. It sequentially polls all connected modules to monitor status and send commands.

The on board PowerPC runs SNMP firmware that is responsible for monitor, control and updating of the connected module database. It also provides an interface to SNMP manager entities. The SNMP firmware provides an interface to the GUI Java applet, the GUI provides a web based graphic user interface which is displayed on your PC.

The module also provides a single dry contact relay accessible via the rack chassis connector.

1.1 Internal architecture



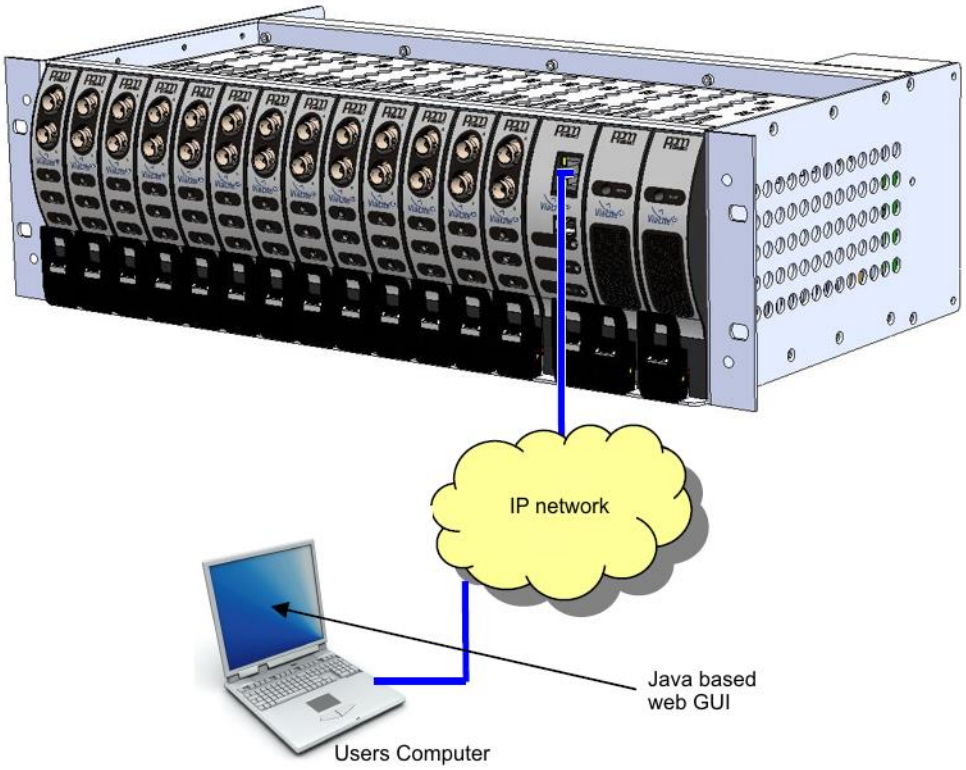
Key features are:

- The Main CPU is an PowerPC running at 133MHz
- The DC input power feed (+12 volts) is protected by a set resetable fuse, which will only open if subject to fault currents.
- The internal 3.3V is generated by a switch mode power converter running at approximately 320kHz
- The internal 5V is generated by a switch mode power converter running at approximately 1MHz
- Other internal voltages are generated from low drop out linear regulators
- The faster ethernet switch has an external clock of 25MHz and an internal clock of 125MHz
- The fibre transceiver is low power class 1 and safe under all normal operating conditions
- The Real time controller has a calendar accurate to 2099 and is clocked at 32kHz
- The Real time clock is backed up with a super capacitor that has a typical hold up time of more than 10 days
- The temperature sensor reports the board temperature
- A single dry contact relay accessible via the rack chassis connector

1.2 Typical deployment

The SNMP and Web controller module is typically deployed as part of a 3U rack chassis based equipment solution. It can however be fitted in a range of other equipment.

When fitted in an HRK3 rack chassis it must be fitted in slot 14, this is the only slot to have communication with all other slots.



1.3 Care of fibre optic connectors

When the fibre optic cables are not connected, it is essential that the cable and equipment connectors are protected by the Dust Caps provided with the system. Failure to do so may result in damage to the fibre ends, which are critical to the system performance. Please refer to section 3.2 for fibre optic cable handling details.

1.4 *ViaLiteHD* and *ViaLite* Classic compatibility

The ***ViaLiteHD*** SNMP and Web controller module will not control or monitor *ViaLite Classic* equipment.

Its 10/100 BaseT copper RJ45 interface may be attached to *ViaLite Classic* equipment to provide a switching function. The 100 BaseF optical interface may be connected to *ViaLite Classic* Ethernet 100Mb/s Optical Transceiver

1.4.1 ViaLiteHD and ViaLite classic compatibility, Ethernet copper RJ45 ports

		ViaLite Classic			ViaLiteHD		
Family	**Function**	SNMP	Ethernet 100BT	Ethernet 1000BT	SNMP	Ethernet 1000BT	**Interface type**
ViaLite Classic	SNMP	✓	×	✓	✓	✓	10 BaseT
	Ethernet 100BT	×	✓	✓	✓	✓	100 Base T
	Ethernet 1000BT	✓	✓	✓	✓	✓	10/100/1000 Base T, switchable
ViaLiteHD	SNMP	✓	✓	✓	✓	✓	10/100 Base T, switchable
	Ethernet 1000BT	✓	✓	✓	✓	✓	10/100/1000 Base T, switchable

1.4.2 ViaLiteHD and ViaLite classic compatibility, Ethernet optical ports

		ViaLite Classic			ViaLiteHD		
Family	**Function**	SNMP	Ethernet 100BT	Ethernet 1000BT	SNMP	Ethernet 1000BT	**Interface type**
ViaLite Classic	SNMP	×	×	×	×	×	No fibre interface
	Ethernet 100BT	×	✓	×	✓	×	100Base F
	Ethernet 1000BT	×	×	✓	×	✓	1000 Base F
ViaLiteHD	SNMP	×	✓	×	✓	×	100Base F
	Ethernet 1000BT	×	×	✓	×	✓	1000 Base F

2 *ViaLiteHD* special hardware and software features

When using the SNMP and web controller the ***ViaLiteHD*** product family make a number of special software and hardware features available to its users.

2.1 Plug and play, default set up

The SNMP and web controller module comes full programmed and configured, it is ready to work. You should check both with your network administrator that this address is valid for your LAN and you are able to access it from your computer. Below are the factory default set ups.

Default serial port PASSWORD	web4270	
Default FTP PASSWORD:	web4270	
Default web GUI address:	10.0.0.104	use http://10.0.0.104 in your web browser
Default web GUI:	LOGIN: + PASSWORD:	see section 5.3 for other access levels
Default SNMP GET community:	public	
Default SNMP SET community:	private	

The module maybe reprogrammed, if desired. Full details are given in this handbook in sections 4 and 5. Details are also given in section 5.2 on how to configure your computer.

2.2 Web based graphical user interface

The module provides a graphical user interface (GUI) Java applet, the GUI provides a web based interface which is displayed on your PC. The GUI will run on a java enabled web browser and allows you to control and monitor the rack chassis. The GUI is password protected; it has three different levels of access. The passwords for different access levels can be set by you see section 5.3.

2.3 System robustness

The ***ViaLiteHD*** rack chassis does not require that the SNMP card is either fitted or running to provide full analogue functionality. All modules fitted in the rack chassis can run independently, once configured.

2.4 SNMP functionality

The module is able to support SNMP functionality and is supplied with a MIB.

2.5 Slot auto configuration

The set up of every module in the rack chassis is stored not only in the module, but it is also stored on board the SNMP and web controller. This allows the controller to remember the configuration of every module in the rack chassis.

If the “Auto slot config” is ENABLED the following will happen:

- All module set up data is stored on the SNMP and web controller when the module is recognised.
- When a module is removed the SNMP and web controller will remember what type of module was in each rack chassis position.
- When a new module is inserted into a vacant slot the SNMP and web controller will compares the NEW module type with the FORMER module type (i.e. Transceiver etc...).
- If this is the same AND “Slot auto config” is ENABLED the controller will up load the FORMER modules configuration to the NEW module.
- If the NEW module’s type does not match the FORMER module type, no changes will be made to the NEW module

If the “Auto slot config” is DISABLED the following will happen:

- The controller will make no changes, it will however store the NEW module configuration if you wish to enable this feature later.

Auto configuration will take a minimum of two rack chassis polling cycles (approximately 15 seconds) to be effective. Auto slot configuration settings will be preserved during a system reset.

2.6 System report

This is a tool that allows you to run a report on the rack chassis and save it as an HTML file see section 6.5.3 for more details.

2.7 FTP download of new software image for SNMP and web controller

This allows you to update the SNMP and web controller software via FTP. The software update will load a single object containing the operational firmware, graphical user interface (GUI) and management interface browser (MIB). For more details see section 6.5.4.1.

2.8 Real time clock

The SNMP and web controller is equipped with a real time clock. This will continue to run after power is removed from the board. It has a built in calendar with leap year correction, up to 2099 and is back up with a super capacitor, which should give at least 10 days of hold up between charges..

2.9 Non volatile event history log

A history of the last 128 events is stored in non volatile memory on the SNMP and web controller. Each event has an index number. This number will increment with each new event. The index number is only reset (to 1) when the event log is cleared. Only the last 128 events are stored, earlier events are erased. See section 6.6 for more details.

2.10 Summary alarm relay

The SNMP and web controller provides a summary alarm relay. The module has a volt free 3-pin connection; this is available on the rack chassis connector. The three connections are Normally Open (NO), Common (COM) and Normally Closed (NC).

Condition 1 - Power applied to rack chassis, no alarms (i.e. normal condition)
- Pin NO is open circuit
- Pin NC is connected to COM

Condition 2 - Power removed from rack chassis and/or one or more module alarms (i.e. Alarm condition)
- Pin NO is connected to COM
- Pin NC is open circuit

2.11 On board fast Ethernet switch

The SNMP and web controller is equipped with a managed on board fast ethernet switch. This supports three copper 10/100 BaseT Ethernet ports and the one optional 100BaseF.

All the copper ports auto negotiate and are rate switchable.

Pin	SNMP controller function	Direction	Comment
1	Ethernet TX+	Output	IP/LAN communication
2	Ethernet TX-	Output	IP/LAN communication
3	Ethernet RX+	Input	IP/LAN communication
4	Not Used	NA	Terminated on board
5	Not Used	NA	Terminated on board
6	Ethernet RX-	Input	IP/LAN communication
7	Not Used	NA	Terminated on board
8	Not Used	NA	Terminated on board

The fibre port must be correctly physically connected (RX to TX) with a suitable 100BaseF transceiver to function correctly.

The optical and copper ports may be used to provide connectivity to other SNMP and web controllers and peripheral customer equipment.

2.12 On board temperature sensor

The module is equipped with an on board temperature sensor that reports the temperature of the SNMP and web controller module.

2.13 GPS mode operation

ViaLiteHD offers a range of modules that can support GPS band signals. It also offers software to mimic the operation of copper connected GPS units. Special GPS band units are equipped with hardware that can provide special GPS functions. They will mimic the operation of an active GPS amplifier through the fibre optic link, allowing alarm status on the remote GPS antenna and LNA to be reported.

2.13.1 GPS transmitter mode operation

Under normal no fault condition a GPS TX FOL will operate in an identical fashion to all other ***ViaLiteHD*** modules. However the transmitter is equipped with additional hardware that detects the DC current flowing from GPS transmitter RF input, to the active GPS antenna.

If the current sunk by the active antenna falls below an alarm threshold (i.e. in the case of the LNA failing or not being connected). The unit will generate an internal alarm. With GPS mode enabled, the transmitter laser will turn off. This will generate an alarm in the connected receiver module, as the connected unit will have a received light level alarm (RLL). The GPS mode can only be ENABLED and DISABLED when the unit is under software control. Modules will be delivered with GPS mode ENABLE.

2.13.2 GPS receiver mode operation, units equipped with GPS load simulator

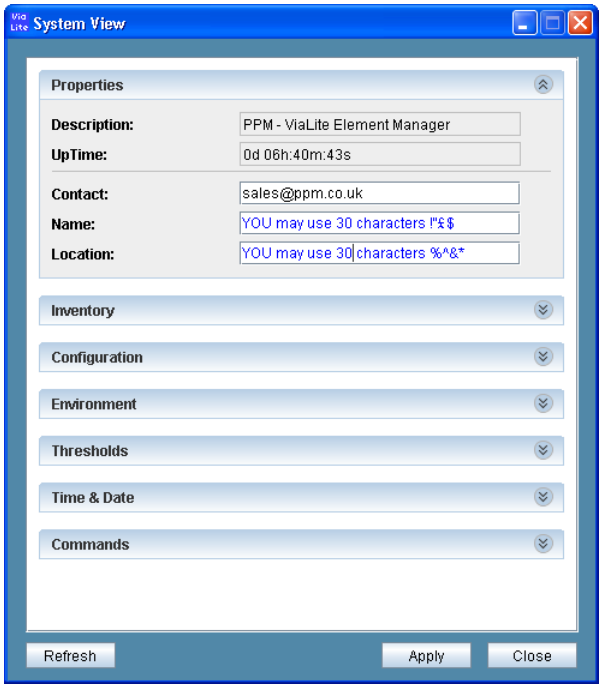
Under normal no fault condition a GPS RX FOL operates very similarly to a normal ***ViaLiteHD*** FOL. With GPS mode enabled, in no fault condition it presents a DC load at its RF output to mimic a connected GPS antenna.

When the unit is in a fault condition; either by way of an internal fault, or due to low received light levels from the connected transmitter, it will disable the current sink. For most GPS receivers this will provide a basic alarm function.

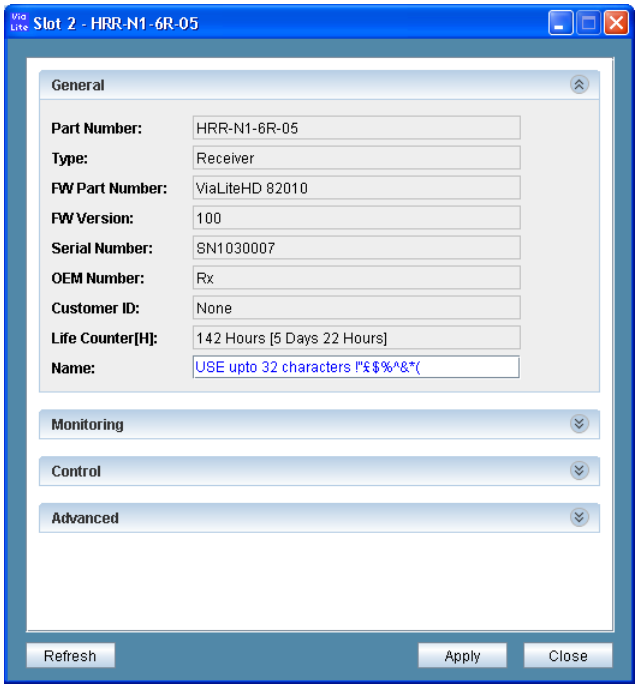
Modules will be delivered with GPS mode ENABLE. If GPS mode is disabled the DC load will be open circuit in both alarm and non-alarm modes. The GPS mode can only be ENABLED and DISABLED when the unit is under software control.

2.14 Use definable name fields for both individual modules and rack chassis

The rack chassis has two USER definable fields (NAME and LOCATION) that may be used to store text information.
Each field maybe up to 30 characters in length, this data is stored in the non volatile memory of the SNMP and web controller.
More details are given in section 6.5.1.1.



Each module position has one USER definable field (NAME) that may be used to store text information on the rack chassis slots.
This maybe up to 32 characters in length, this data is stored in the non volatile memory of the SNMP and web controller. The text stored is associated with slot position and will not change if the slot module is changed.



3 SNMP and Web controller module, physical interfaces

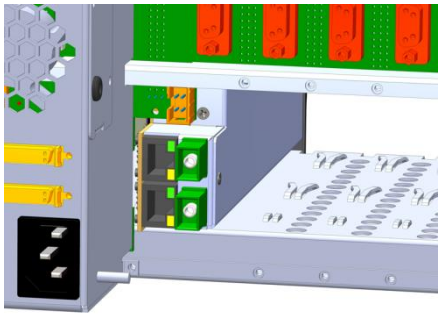
This section describes the connections between your ***ViaLiteHD*** Modules and the SNMP and Web controller module. There is no need to install any interface cables between SNMP and Web controller module and connected modules, as these are all connected via the rack chassis backplane. Please read fully all relevant documents for information on installing your ***ViaLiteHD*** equipment before commissioning your system.

3.1 Module operation, 7HP standard plug-in module

All ***ViaLiteHD*** plug-in modules are hot-swappable, so it is not necessary to power-down the rack chassis before inserting a module. All optical and ethernet connectors are retained by the module. So it is necessary to either disconnect any cables or have a sufficiently long service loop.

To install a 7HP Standard module

- The protective covers on the connectors may be left in place.
- Push the release button of the module handle down and simultaneously pull the top of the handle forwards.
- Align the module upright and perpendicular to the front face of the rack chassis so that the PCB slides into the “crow’s feet” card guides top and bottom.
- Gently push the module down its guide, applying pressure via the handle, you may also apply pressure between the LED and craft port.
- As the module is fully mated the top of the handle should snap back and lock in position.
- The pawls of the handle should be fully engaged in the matching slots.
- If power is applied to the rack chassis the module power LED should light as soon as the module is fully inserted
- Remove protective covers and connect any interface cables



To remove a 7HP Standard module

- Disconnect any cables if necessary
- Push the release button of the module handle down and simultaneously pull the top of the handle forwards.

Apply pressure via the handle and gently withdraw the module from the rack chassis.

3.2 Fibre optic cable & connectors

3.2.1 Connector and cable types

All ***ViaLiteHD*** SNMP and Web controller module uses singlemode (9µm/125µm) cable terminated in a range of optical connectors detailed below. Cross-site fibre optic cables are available from PPM as either standard patch leads or heavy-duty multicore cables.

Warning! Angle polished (APC) and standard (PC) connector must not be confused. The two connector-types are not interchangeable and mating one with the other will damage both the cable and the module connectors.

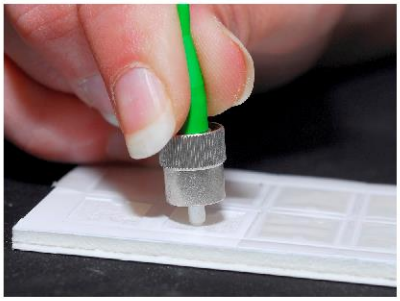
Warning! The specification of optical connector is critical to the performance of the complete fibre optic link. System performance can only be guaranteed with fibre optic cables and connectors supplied by PPM. When FC/APC connectors are specified they must be "narrow key width"

3.2.2 Connecting and disconnecting

Before connecting optical fibres to the module or to each other, ensure that the mating connectors are clean (see below).

3.2.3 Cleaning optical connectors, cleaning before every use

Optical connectors MUST be cleaned before use, even where they have been protected with dust caps.. **Most performance issues are due to dirty fibres**.

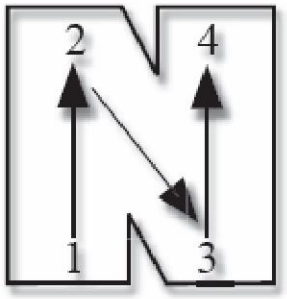


- Peel the plastic cover from an unused "N" cleaning pad.

- Hold the connector between your thumb and forefinger

Clean the connector using firm pressure by swiping in a pendulum motion through each segment of the "N" shape, following the diagram

- Do not swipe over the same space twice.



For more details please read the cleaning instruction which accompanies the connector cleaning kit. Details can also be found on the CD supplied with your equipment.

3.2.4 Cleaning optical connectors, high levels of contamination

If there are performance issues that are not resolved by basic cleaning in section 3.2.3, then the following procedure should be used. If the level of contamination is high it will be necessary to repeat this procedure.

Cleaning items required
- Lint free fibre cleaning tissues and/or cleaning sticks(normal cosmetic tissues produce dust and are not acceptable).
- Reagent grade Iso Propyl Alcohol.
- Air duster or filtered compressed air line.

Cable Connector Cleaning
- Dampen a patch of cleaning tissue with IPA and clean all surfaces of the plug ferrule.
- Using a dry cleaning tissue, dry the ferrule and clean the end face.
- Using the air duster, blow away any residue from the end of the connector.

Module Female Receptacle Cleaning (only recommended if problems are being experienced)
- Either use an optical cleaning stick or twist a cleaning tissue to form a stiff probe, then moisten with IPA. Gently push the probe into the receptacle and twist around several times to dislodge any dirt.
- Repeat the above process with a dry tissue.
- Using the air duster, blow away any residue from the receptacle.

Important Notes
- IPA is flammable. Follow appropriate precautions / local guidelines when handling and storing.
- IPA can be harmful if spilt on skin. Use appropriate protection when handling.
- It should only be necessary to clean the female receptacles on the modules if problems are being experienced.

Never inspect an optical fibre or connector with the naked eye or an instrument unless you are convinced that there is no optical radiation being emitted by the fibre. Remove all power sources to all modules, and completely disconnect the optical fibres.

3.2.4.1 FC/APC

All PPM FC connectorised modules use FC/APC (narrow key). Clean the plug before inserting see section 3.2.3.

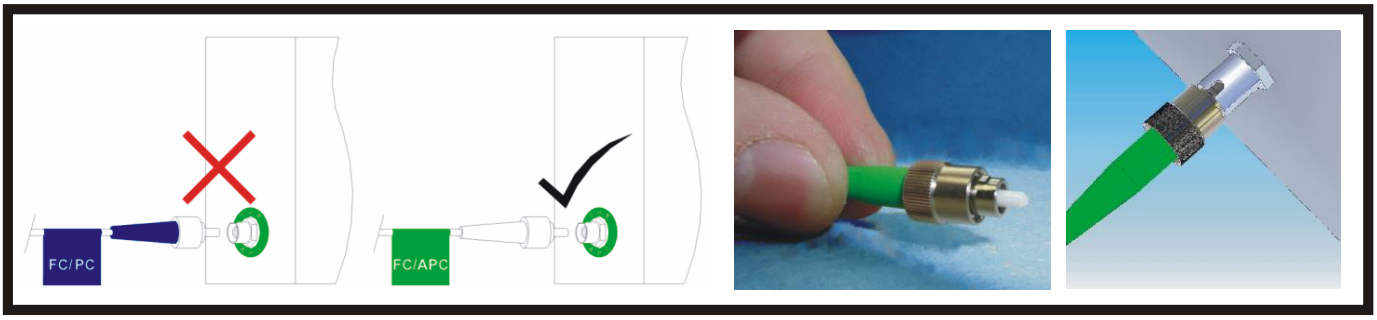
To connect FC/APC optical connectors:-

- Remove the dustcaps and align the white ceramic centre ferrule on the cable connector with the mating receptacle.
- There is a key (lug) on the side of the ferrule, which must match the keyway (gap) in the receptacle shroud.
- When they are aligned, gently push the plug home.
- Finger tighten the knurled collet nut onto the threaded receptacle.

To disconnect:-

- Using fingers fully unscrew the knurled collet nut, gently withdraw the connector.
- Replace the dustcaps on both the receptacle and the cable plug.

Warning! It is possible to tighten the knurled collet without aligning the lug and gap. This will result in poor light transmission. Check that the lug and gap are aligned before tightening the knurled collet



Only connect FC/APC cable to FC/APC modules | Locate connector key | Align key and keyway

3.2.4.2 SC/APC

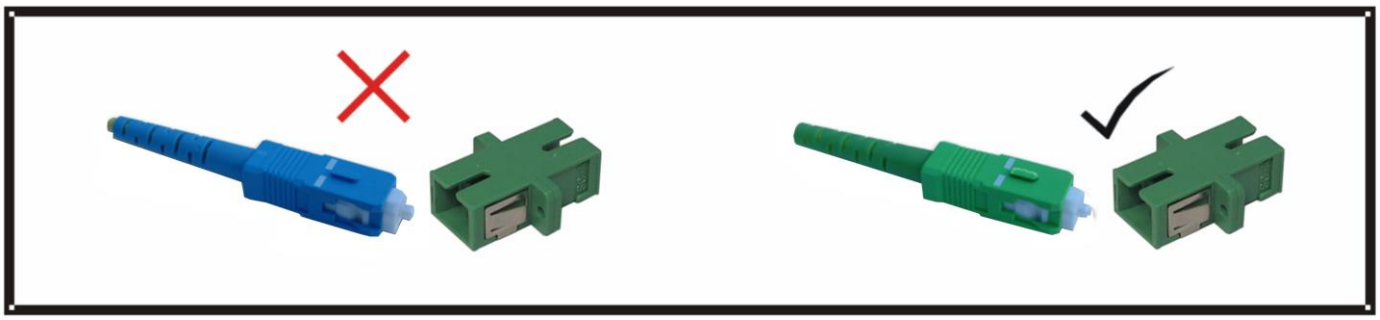
All PPM SC connectorised modules use SC/APC. Clean the plug before inserting see section 3.2.3.

To connect SC/APC optical connectors:-

1. Remove the plug protective cover.
2. Align the connector keyway slot in the adaptor to the key of the plug.
3. Gently push the plug into the adapter until a click is heard and the connector locks.

To disconnect:-

4. grip the body of the plug and gently pull the plug from the adaptor, replace the protective cover.



Only connect SC/APC cable to SC/APC.

3.2.5 Minimum Bend Radius

Because the optical fibre is made of glass, it is important not to subject it to excessive stress. For this reason, each type of cable has a minimum bend radius (MBR) specification, beyond which the cable cannot be bent without permanent damage occurring.

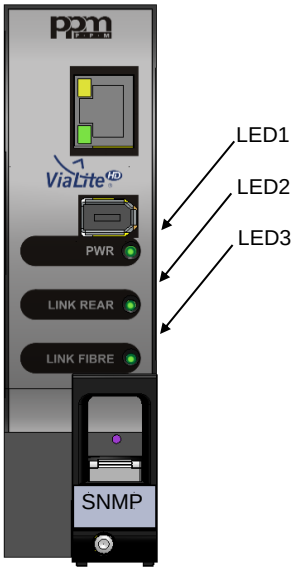
Minimum Bend Radius of Fibre Optic Cable fitted to OEM modules is 50mm
MBR specifications for PPM fibre are given in the *ViaLite Classic* and ***ViaLiteHD*** System Handbook Lxx-HB and Hxx-HB.

3.3 Front panel

3.3.1 Front Panel Indicators, plug in modules

Each plug-in module has three front panel LEDs for indication of the state of the module. The following table shows the operation of the front panel LEDs which are dependent on module type.

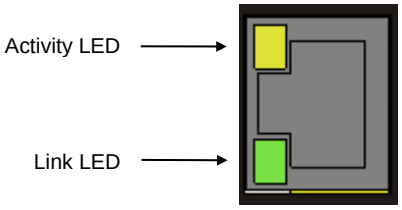
	Colour	SNMP and Web controller
LED1	GREEN	Normal
	RED	Alarm
	No light	No power
LED2	GREEN	Rear RJ45 port link established
	No light	Rear RJ45 port unconnected
LED3	GREEN	Rear Fibre port link established
	No light	Rear Fibre port unconnected



3.3.2 RJ45 Indicators, plug in modules

Each plug-in module has one front and two rear RJ45 connectors. Each has build in LED indicators to show the status of that connection. All RJ45 (and optical) ethernet port connections are connected to an internal ethernet switch.

	Colour	SNMP and Web controller
Link LED	AMBER or FLASHING	Link sending/receiving data
	No light	No data
Activity LED	GREEN	Link established
	No light	Unconnected

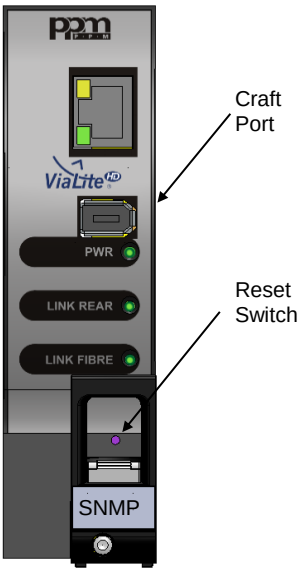


3.3.3 Front panel craft port and reset switch

Each SNMP and Web controller module is fitted with a craft port, this is used for low level set up and configuration. The craft port uses a Firewire, 6 circuit connector (IEE1394). The module is supplied with a Firewire to 9 way D type cable that can be used for configuration (ppm part number 73706).

This can be ordered separately, if spares or replacements are required.

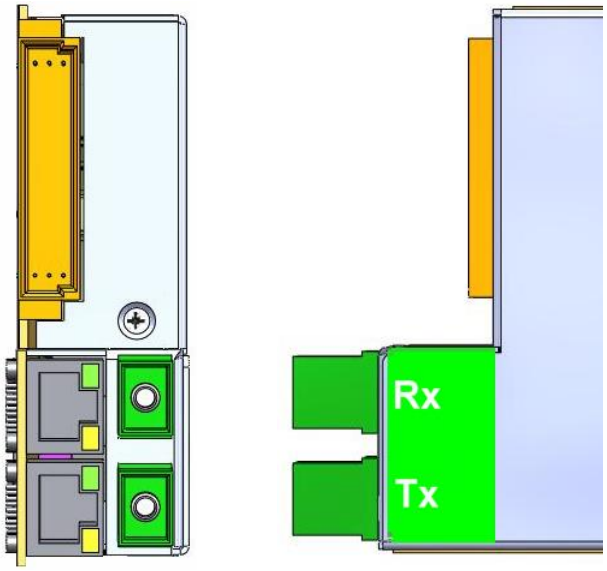
The hard reset switch is accessible via a small hole behind the handle. Under all normal operating circumstances it should not be required. Actuating the hard reset will cause the module to reboot.



3.4 Rear panel

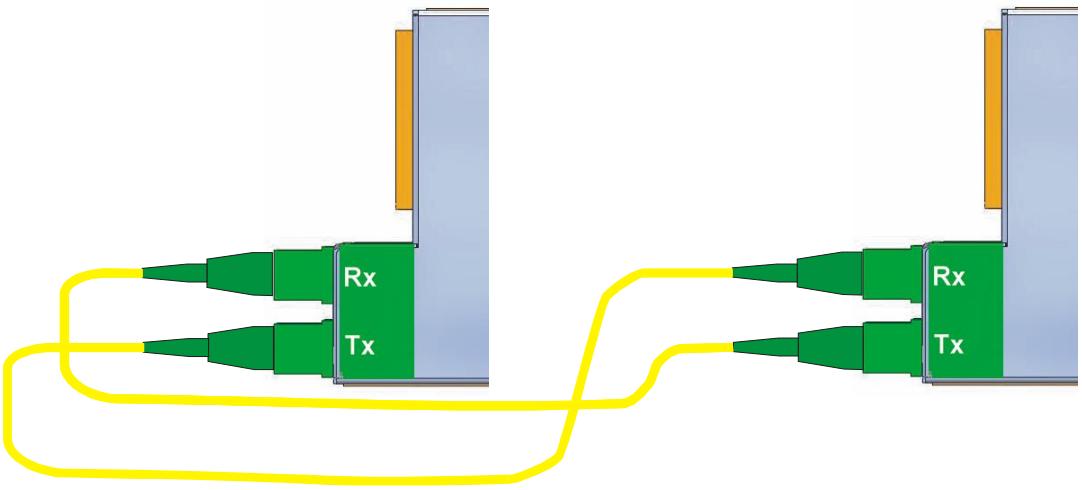
The rear panel provides interconnections for the rack chassis connector and the rear mounted RJ45 and optional fibre connectors.

The optional fibre connectors maybe SC/APC (illustrated) or FC/APC. All RJ45 (and optical) ethernet port connections are connected to an internal ethernet switch.



3.4.1 Rear panel, connecting two SNMP and web controller via the fibre ports

When connecting the fibre ports of an SNMP and web controller either to another SNMP and web controller (or to a 100 BaseF fibre transceiver). It is necessary to correctly connected the ports as they will not auto negotiate.



4 Setting up the SNMP and Web controller module

Your SNMP and web module is delivered fully configured, see section 2.1. Below are details of how to change from these default configurations

4.1 Connecting the Module

Connect the module to the power source and ethernet cables. Optionally you may also connect the module to fibre optic cables as described in section 3.3.3 and connect the dry contact relay (via rack chassis connector). All signals must remain within acceptable limits, see technical specifications in section 11.

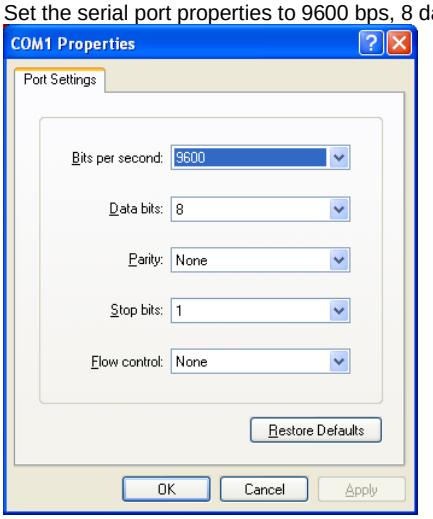
4.2 Setting the IP address and serial interface

The module needs to be set up before connecting to the network. Computer with serial port and terminal program is needed. Screenshots in this manual relate to the Windows HyperTerminal but any other terminal can be used.

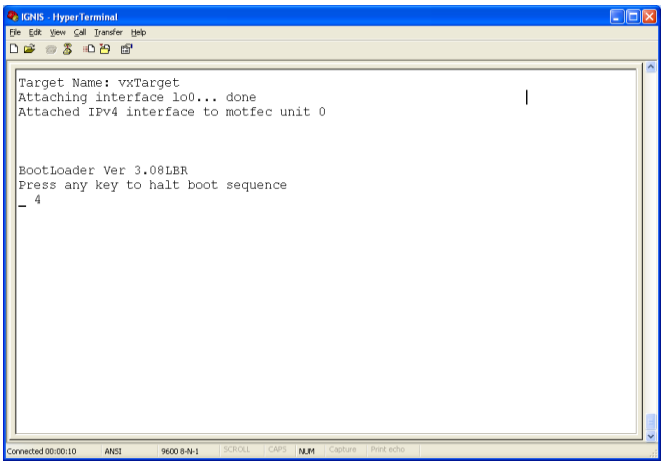
1. Connect the module to the serial port using programming cable
2. Open HyperTerminal (or another equivalent terminal) and create a new connection by choosing File | New Connection

3. Choose Connecting Using and select the serial port ***VialiteHD*** rack is connected to.

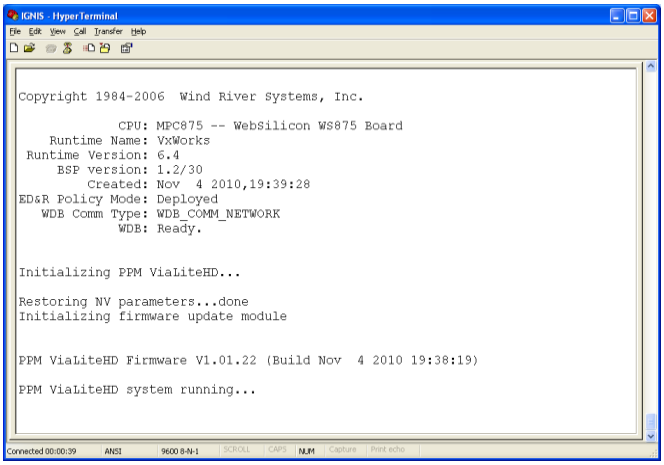
4. Set the serial port properties to 9600 bps, 8 data bits, 1 stop bit, no parity, no flow control.



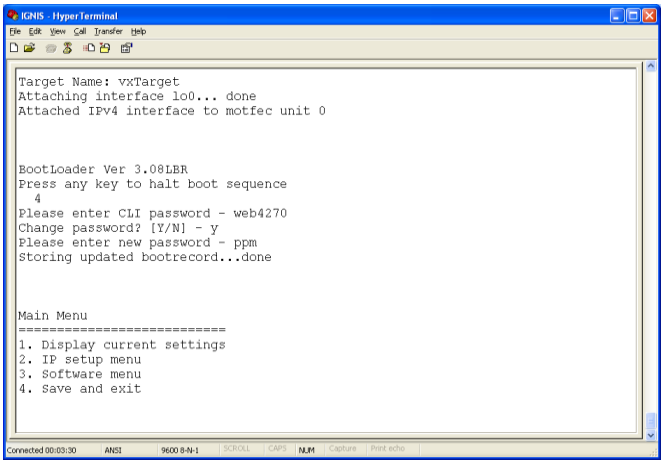
5. Click Ok button, terminal now should be ready to work.
   Open the previously set-up connection and power up the ***ViaLiteHD*** rack chassis. The screen should look like in the picture below.


IGNIS - HyperTerminal
File Edit View Call Transfer Help
Target Name: vxTarget
Attaching interface lo0... done
Attached IPv4 interface to motfec unit 0
BootLoader Ver 3.08LBR
Press any key to halt boot sequence
_ 4
Connected 00:00:10 ANSI 9600 8-N-1 SCROLL CAPS NUM Capture Print echo

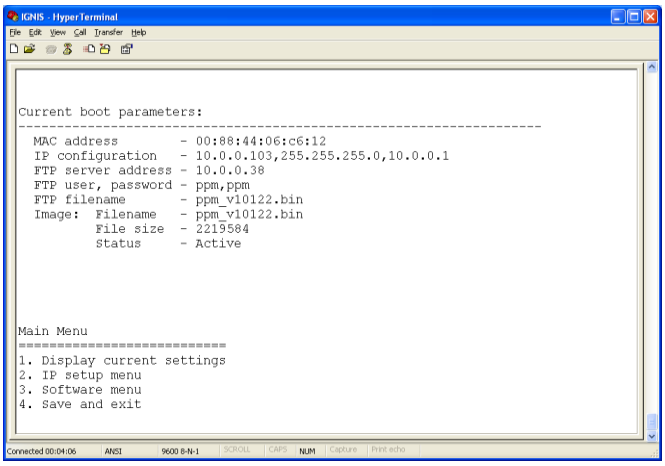
6. If you do not press any key software will operate normally (see screenshot below)


IGNIS - HyperTerminal
File Edit View Call Transfer Help
Copyright 1984-2006 Wind River Systems, Inc.
CPU: MPC875 -- WebSilicon WS875 Board
Runtime Name: VxWorks
Runtime Version: 6.4
BSP version: 1.2/30
Created: Nov 4 2010,19:39:28
ED&R Policy Mode: Deployed
WDB Comm Type: WDB_COMM_NETWORK
WDB: Ready.
Initializing PPM ViaLiteHD...
Restoring NV parameters...done
Initializing firmware update module
PPM ViaLiteHD Firmware V1.01.22 (Build Nov 4 2010 19:38:19)
PPM ViaLiteHD system running...
Connected 00:00:39 ANSI 9600 8-N-1 SCROLL CAPS NUM Capture Print echo

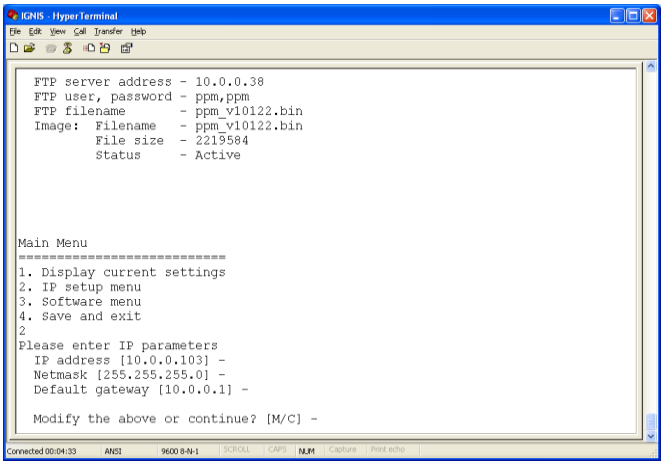
7. If key has been pressed configuration mode is active now.
   To enter the mode type-in the password. Default password is "**web4270**", but it could be changed at this stage
   If correct password has been entered, main menu appears on the screen. It consists of four options.


IGNIS - HyperTerminal
File Edit View Call Transfer Help
Target Name: vxTarget
Attaching interface lo0... done
Attached IPv4 interface to motfec unit 0
BootLoader Ver 3.08LBR
Press any key to halt boot sequence
4
Please enter CLI password - web4270
Change password? [Y/N] - y
Please enter new password - ppm
Storing updated bootrecord...done
Main Menu
==========
1. Display current settings
2. IP setup menu
3. Software menu
4. Save and exit
Connected 00:03:30 ANSI 9600 8-N-1 SCROLL CAPS NUM Capture Print echo

8. Display current settings
   Option displays current IP and FTP settings

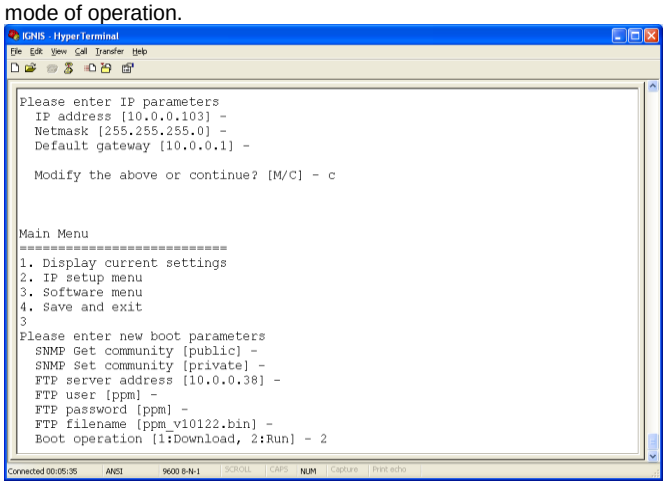


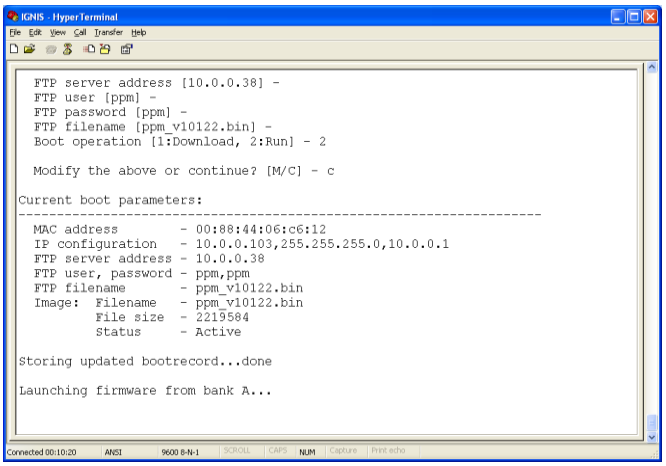
9. IP setup menu
   IP address of the unit, netmask and default gateway can be set. Currently set values are in the brackets. Shall the value remain unchanged, just press Enter.


IGNIS - HyperTerminal
File Edit View Call Transfer Help
FTP server address - 10.0.0.38
FTP user, password - ppm,ppm
FTP filename - ppm_v10122.bin
Image: Filename - ppm_v10122.bin
File size - 2219584
Status - Active
Main Menu
1. Display current settings
2. IP setup menu
3. Software menu
4. Save and exit
2
Please enter IP parameters
IP address [10.0.0.103] -
Netmask [255.255.255.0] -
Default gateway [10.0.0.1] -
Modify the above or continue? [M/C] -
Connected 00:04:33 ANSI 9600 8-N-1

After setting-up the parameters press C if values are correct or M to modify the setting.

10. Software menu
    This menu allows to download new software version and to set SNMP communities. By default “public” is community name for Read only operations, “private” for Read/Write operations. If software upgrade is not required, keep FTP settings unchanged by pressing ENTER and choose 2 to select Run (otherwise the unit will boot in the serial configuration mode) – standard running mode of operation.

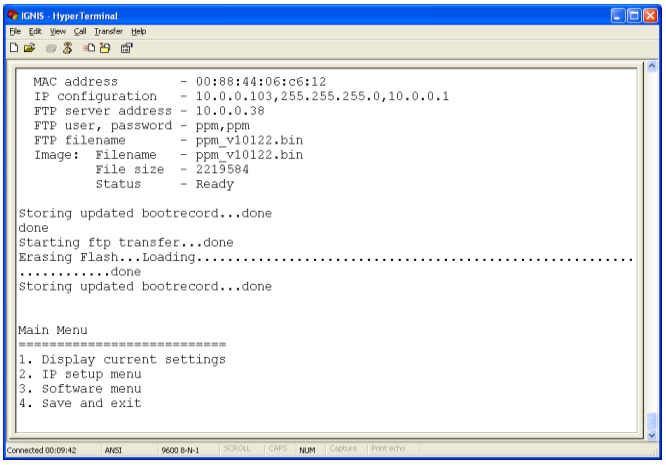

IGNIS - HyperTerminal
File Edit View Call Transfer Help
Please enter IP parameters
IP address [10.0.0.103] -
Netmask [255.255.255.0] -
Default gateway [10.0.0.1] -
Modify the above or continue? [M/C] - c
Main Menu
1. Display current settings
2. IP setup menu
3. Software menu
4. Save and exit
3
Please enter new boot parameters
SNMP Get community [public] -
SNMP Set community [private] -
FTP server address [10.0.0.38] -
FTP user [ppm] -
FTP password [ppm] -
FTP filename [ppm_v10122.bin] -
Boot operation [1:Download, 2:Run] - 2
Connected 00:05:35 ANSI 9600 8-N-1


IGNIS - HyperTerminal
File Edit View Call Transfer Help
FTP server address [10.0.0.38] -
FTP user [ppm] -
FTP password [ppm] -
FTP filename [ppm_v10122.bin] -
Boot operation [1:Download, 2:Run] - 2
Modify the above or continue? [M/C] - c
Current boot parameters:
MAC address - 00:88:44:06:c6:12
IP configuration - 10.0.0.103,255.255.255.0,10.0.0.1
FTP server address - 10.0.0.38
FTP user, password - ppm,ppm
FTP filename - ppm_v10122.bin
Image: Filename - ppm_v10122.bin
File size - 2219584
Status - Active
Storing updated bootrecord...done
Launching firmware from bank A...
Connected 00:10:20 ANSI 9600 8-N-1

Note that software upgrade requires network connection and cannot be done using serial port. Serial port is used only to set right parameters. File to download has to be accessible via FTP protocol. Upgrade can be done from GUI level, which is in most cases the most convenient way.

Note that downloading of incorrect file can prevent the unit from running and will require a factory upgrade.

11. In order to upgrade the software, set the FTP server name, user name and password as well as name of the software file. Then choose 1 to download the new software version. The screen should look like this:



After the download has finished, go to the Software menu and choose 2 to run the software (keep pressing ENTER to keep current values of other parameters).

12. Save and Exit
Use this option to save the changes done in the process

4.3 Configuring rack chassis slot positions

The SNMP and web controller is able to automatically recognise the type of module fitted in each slot. This allows it to use the correct type of graphic for the front panel representation and present an appropriate control interface. The only module that is not recognised by the SNMP and web controller is the redundancy load module, this will just show as a blank slot.

In the unlikely event that the modules fitted in your rack chassis post date the software load on your SNMP card, it will present a default graphic and a control interface that contains the basic module information.

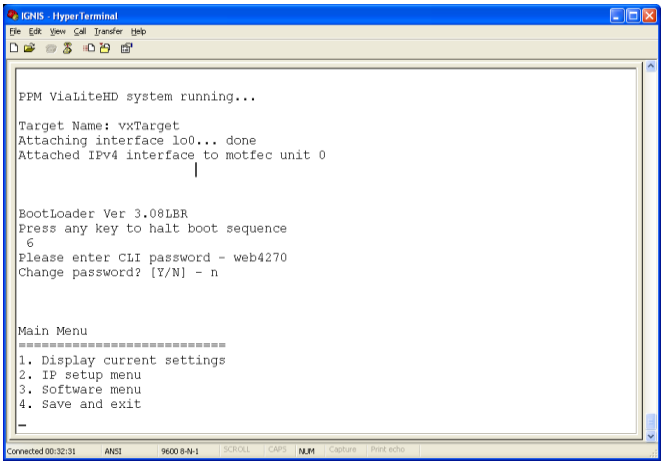
4.4 Setting SNMP protocol communities names

Before starting to use SNMP protocol communities name need to be set. Community name is password equivalent for SNMP protocol it sets the access level.

There are two communities defined, one is “get community” which allows for read only operations; the “set community” allows both reading and writing to the unit.

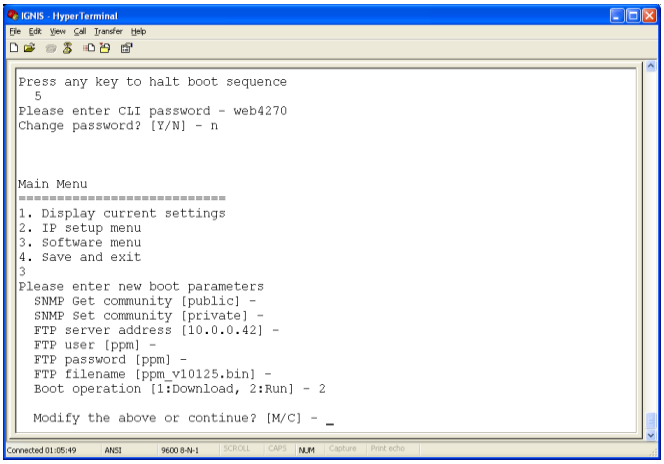
Following convention default the “get community” name is “public” while “set community” name is “private”. Community names can be changed only using craft port. It is not possible to change them via any network protocol.

1. In order to change settings for SNMP communities open serial configuration menu as previously described and choose option 3 ‘Software menu’ see section 4.2.


IGNIS - HyperTerminal
File Edit View Call Transfer Help
PPM ViaLiteHD system running...
Target Name: vxTarget
Attaching interface lo0... done
Attached IPv4 interface to motfec unit 0
BootLoader Ver 3.08LBR
Press any key to halt boot sequence
6
Please enter CLI password - web4270
Change password? [Y/N] - n
Main Menu
1. Display current settings
2. IP setup menu
3. Software menu
4. Save and exit
Connected 00:32:31 ANSI 9600 8-N-1

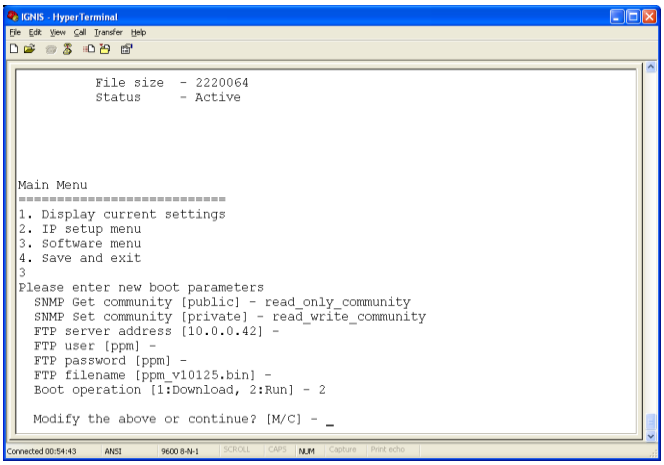
2. Using this option you can change SNMP communities names, parameters for software upgrade download and mode of operation (for normal option select 2).

3. Current values are displayed in parenthesis. If they should remain unchanged, just press ‘Enter’ key to confirm current value.
In the example below all current values were confirmed hence no modification would be done.

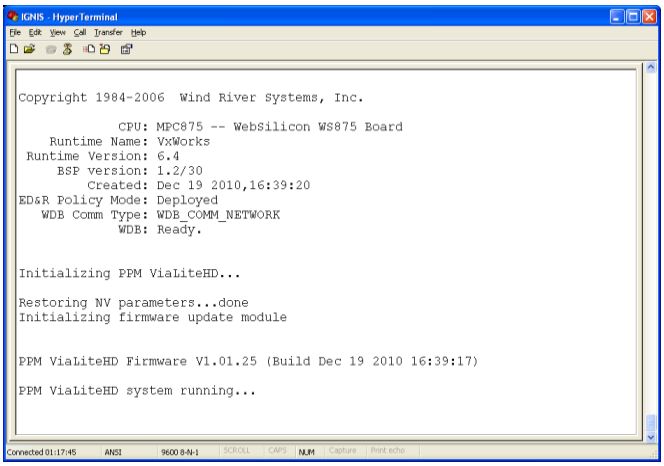

IGNIS - HyperTerminal
File Edit View Call Transfer Help
Press any key to halt boot sequence
5
Please enter CLI password - web4270
Change password? [Y/N] - n
Main Menu
1. Display current settings
2. IP setup menu
3. Software menu
4. Save and exit
3
Please enter new boot parameters
SNMP Get community [public] -
SNMP Set community [private] -
FTP server address [10.0.0.42] -
FTP user [ppm] -
FTP password [ppm] -
FTP filename [ppm_v10125.bin] -
Boot operation [1:Download, 2:Run] - 2
Modify the above or continue? [M/C] -
Connected 01:05:49 ANSI 9600 8-N-1

4. In case any modification, it will be necessary press ‘M’, otherwise press ‘C’ to continue.

5. In the example below SNMP communities names were changed (from “public” to “read_only_community” and from “private” to “read_write_community”) while the other parameters remained unchanged.


IGNIS - HyperTerminal
File Edit View Call Transfer Help
File size - 2220064
Status - Active
Main Menu
1. Display current settings
2. IP setup menu
3. Software menu
4. Save and exit
3
Please enter new boot parameters
SNMP Get community [public] - read_only_community
SNMP Set community [private] - read_write_community
FTP server address [10.0.0.42] -
FTP user [ppm] -
FTP password [ppm] -
FTP filename [ppm_v10125.bin] -
Boot operation [1:Download, 2:Run] - 2
Modify the above or continue? [M/C] -
Connected 00:54:43 ANSI 9600 8-N-1

6. If the mode of operation is ‘Run’ after pressing ‘C’ unit reboots and is ready for normal operation – see screenshot below



5 Connecting to the SNMP and web controller

Your SNMP and web module is delivered fully configured, see section 2.1. Below are details of how to change from these default configurations

5.1 Computer software environment

It is necessary to ensure that your connected computer is correctly configured.

Firstly ensure that your PC meets the minimum requirements, it must have:

1. Windows XP, service pack 2 or later
2. Microsoft Internet Explorer 8.0 or later
3. Java Plug-in 1.6.0 or later

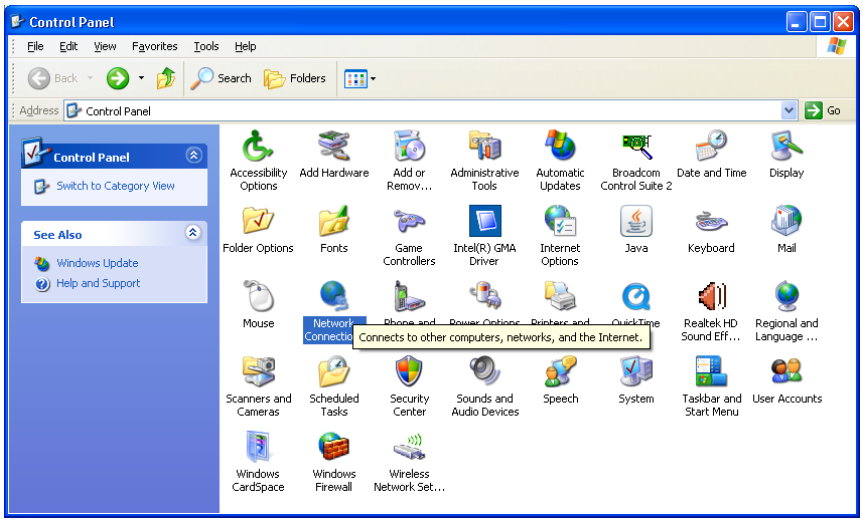
5.2 Computer IP configuration

Physically connect the ethernet port of your computer either directly the SNMP and web controllers front or rear panel ethernet ports; or to a network that this unit is connected to via a router or switch.

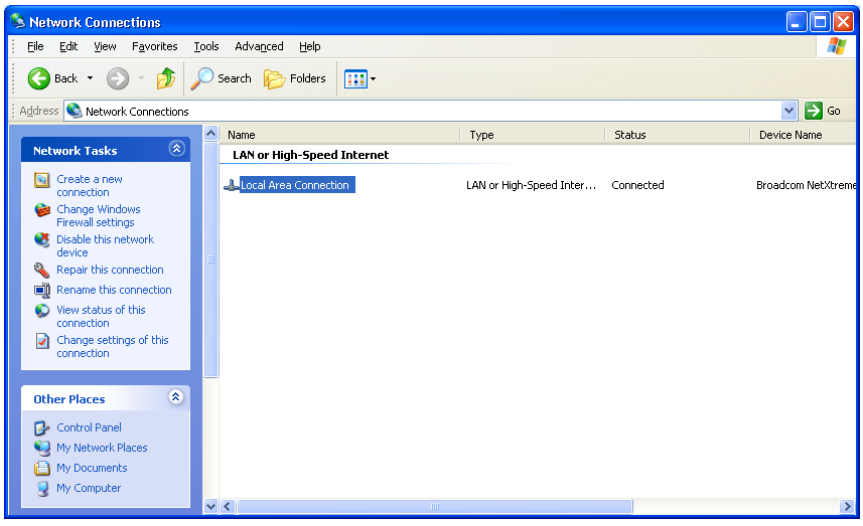
Ensure that your PC has a valid IP address issued by the Dynamic Host Configuration Protocol (DHCP)

If your computer is running stand alone you may need to configure its IP address manually

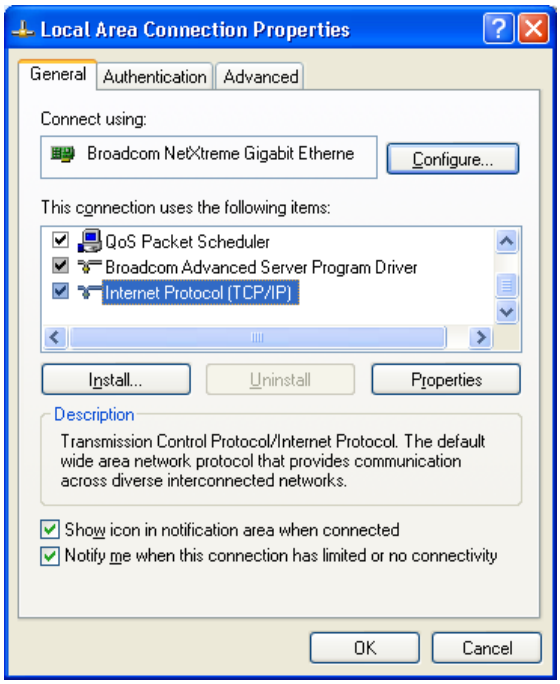
Open up control panel; and select “Network Connection” and double click



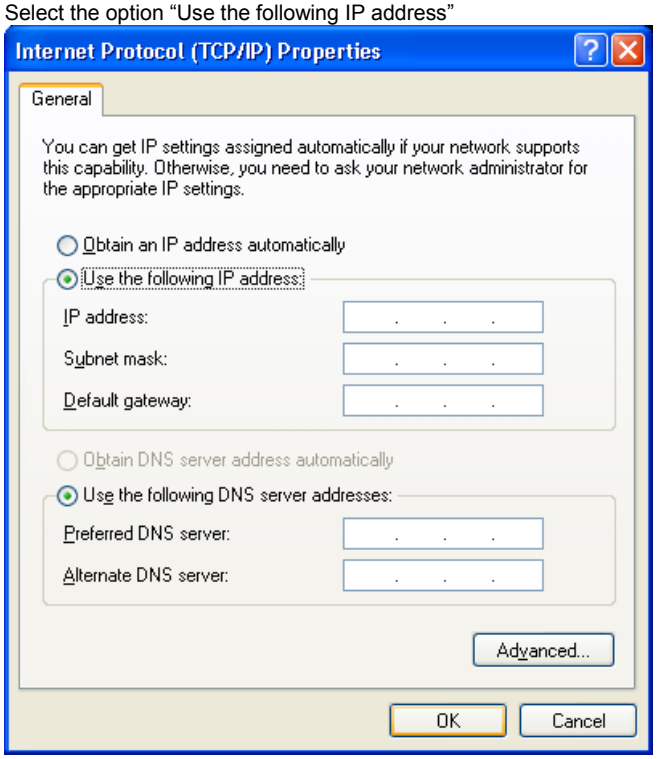
Select “local area connection” click right and select properties



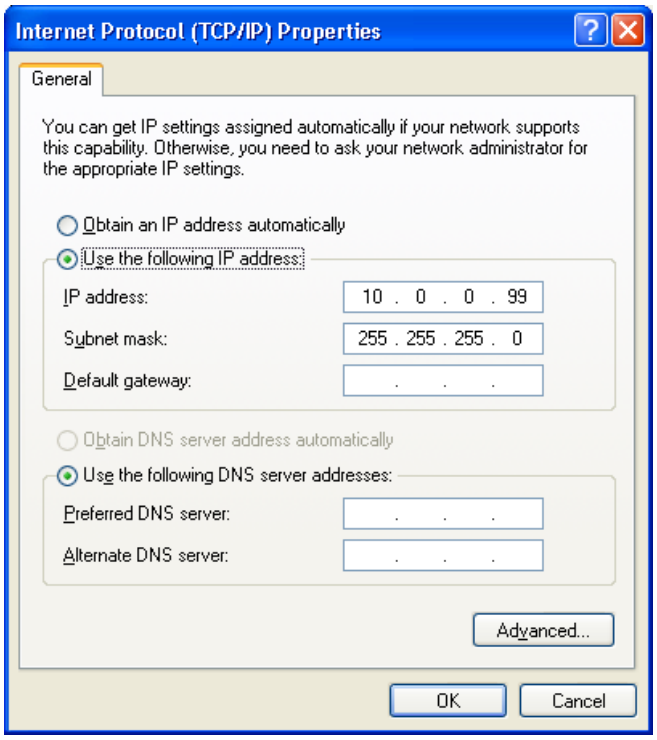
Select Internet Protocol (TC/IP) and click on properties



Select the option “Use the following IP address”


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Now enter a compatible IP address and subnet gateway, you may need you network administrator to advise you of these
The IP address should be in the same range as that used for the IP of the SNMP and web controller module


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
10 . 0 . 0 . 99
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

You should now be able to connect

5.3 User access levels and passwords

There are three levels of user access allowed on the GUI, these are:

Access Level	USER NAME	Description
Guest	Guest	can read all parameters except advanced, cannot modify configuration or execute any commands
Admin	Admin	can read all parameters except advanced, can modify configurations and execute commands
Tech	Technician	can read and modify everything, all command available

Each access level has a preset default password, these passwords are:

Access Level	USER NAME	Default PASSWORD
Guest	Guest	guest
Admin	Admin	admin
Tech	Technician	tech

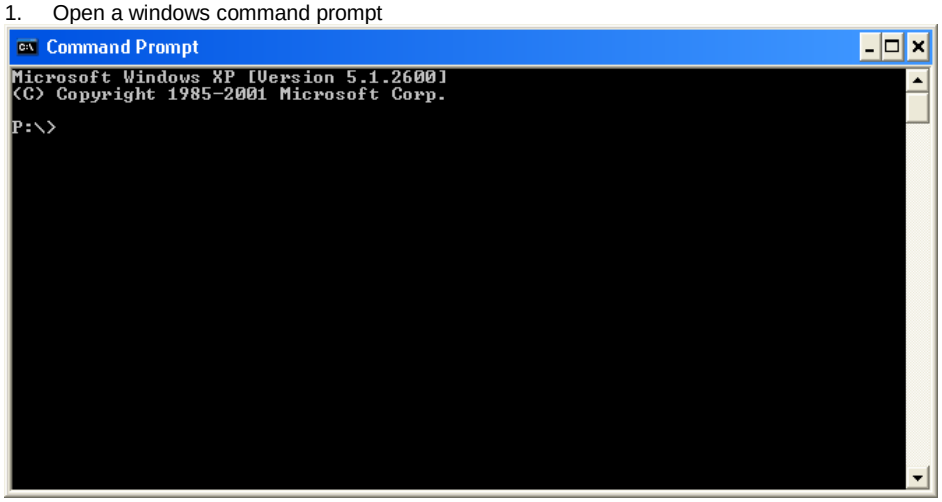
These the LOGIN names cannot be changed, but the PASSWORDS may, see the following section

Note: The USER NAMES and PASSWORDs for web access are case sensitive

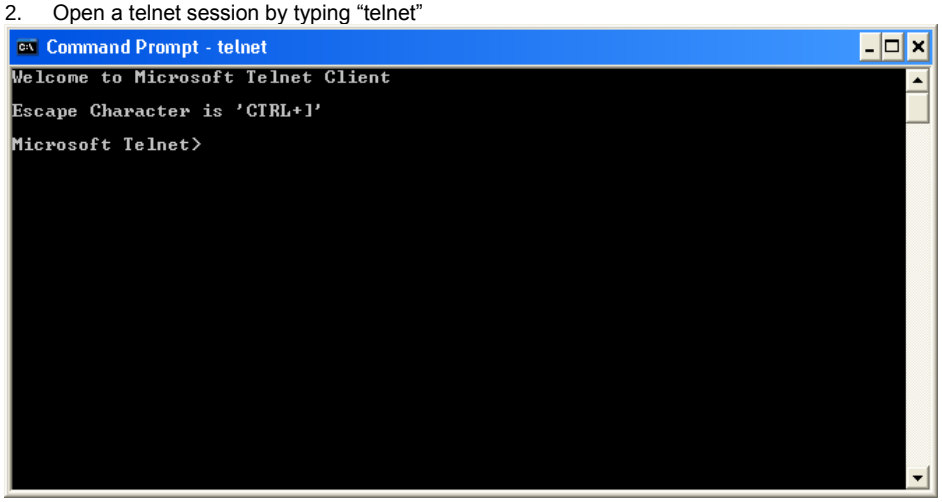
5.4 Setting user access passwords

To set user access password you must log onto the module using telnet or a similar system

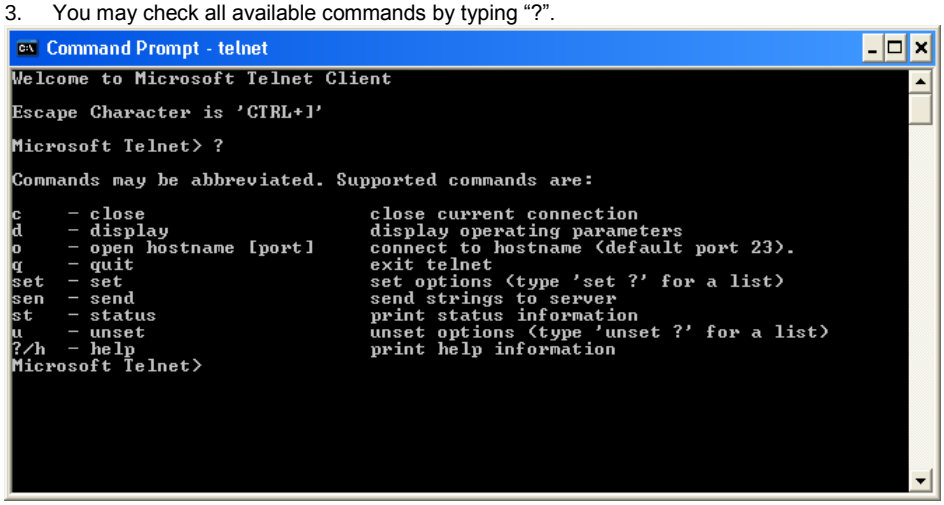
1. Open a windows command prompt



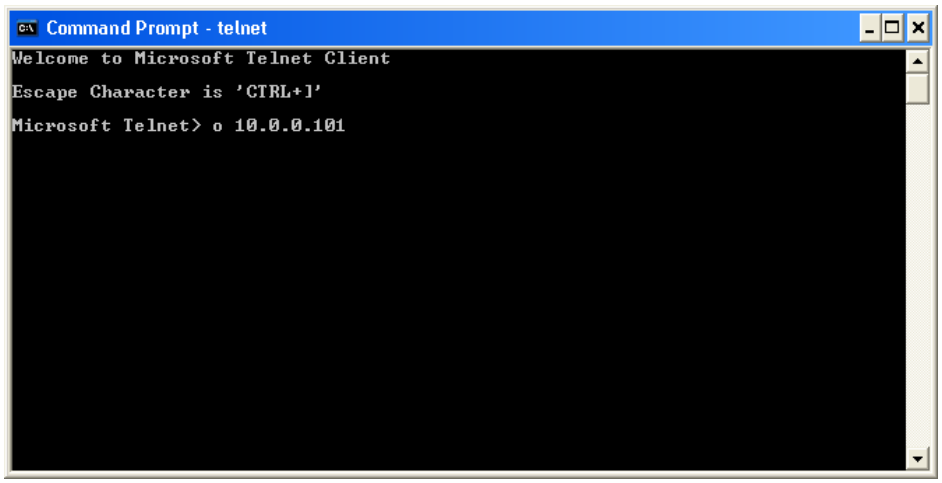
2. Open a telnet session by typing “telnet”



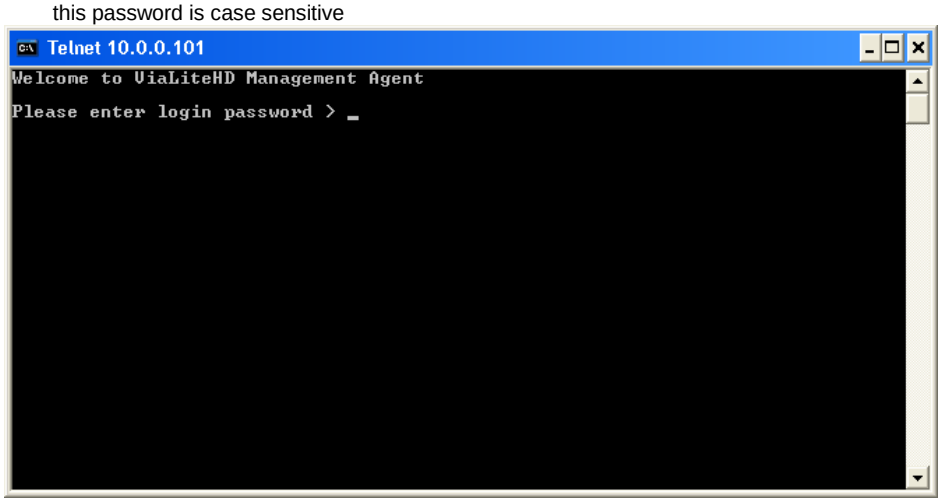
3. You may check all available commands by typing “?”.


Command Prompt - telnet
Welcome to Microsoft Telnet Client
Escape Character is 'CTRL+]'
Microsoft Telnet> ?
Commands may be abbreviated. Supported commands are:
c - close close current connection
d - display display operating parameters
o - open hostname [port] connect to hostname (default port 23).
q - quit exit telnet
set - set set options (type 'set ?' for a list)
sen - send send strings to server
st - status print status information
u - unset unset options (type 'unset ?' for a list)
?/h - help print help information
Microsoft Telnet>

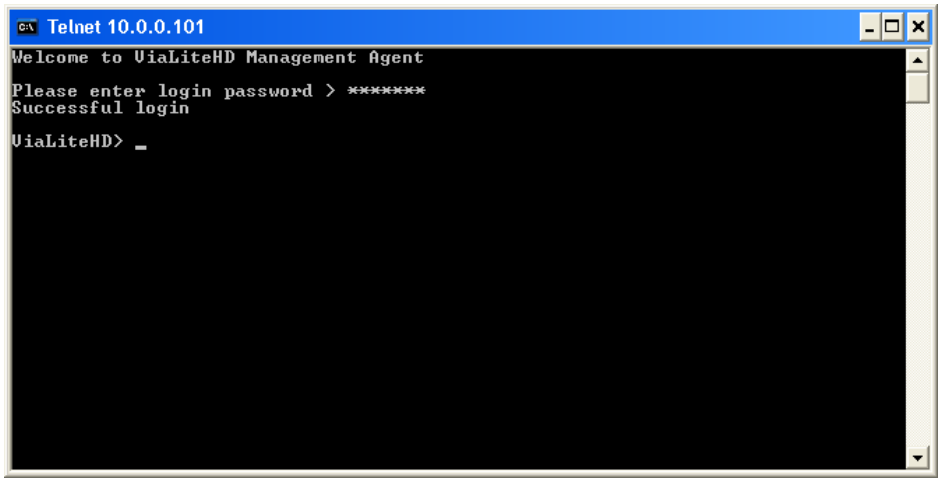
4. Open a telnet session by typing “o <IPADDRESS>” in this example “o 10.0.0.101



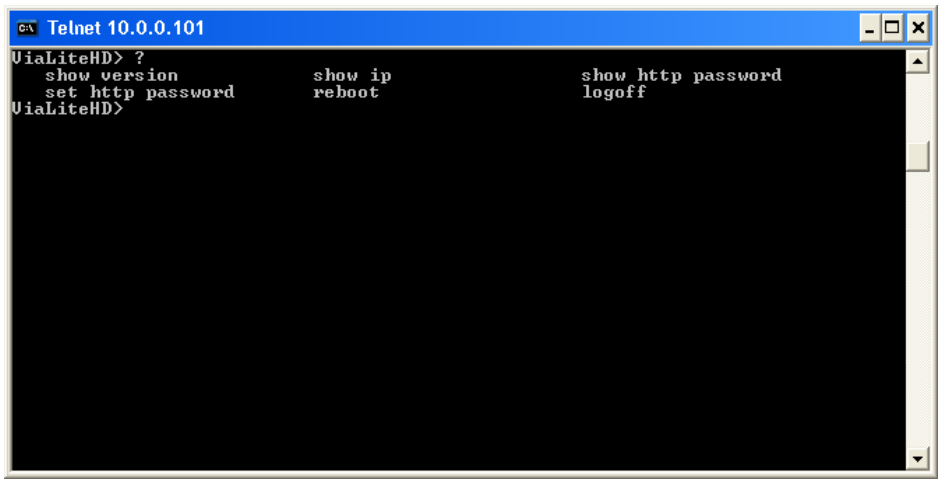
5. You will be prompted for the password this is the same us used or set in section 4.2, by default "**web4270**" (unless changed), note this password is case sensitive

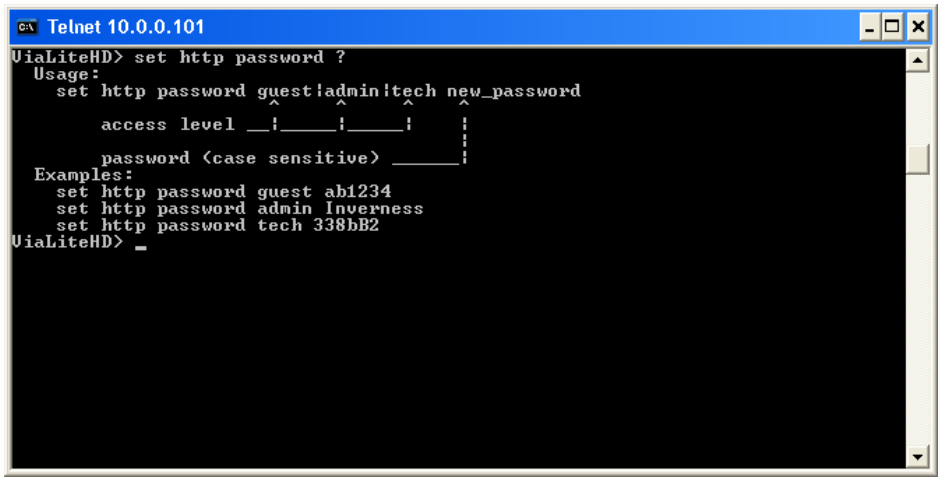


6. When the correct password is entered the unit will display a command prompt "ViaLiteHD"

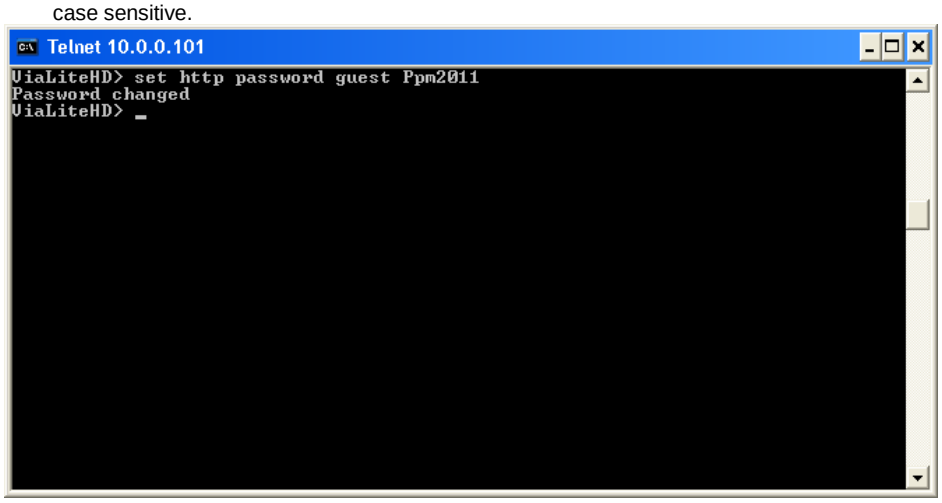


7. There are three user levels Guest, Admin and Technician. To change user access passwords. You may check all available commands by typing "?". You can check the format of a specific command by typing the command followed by "?".

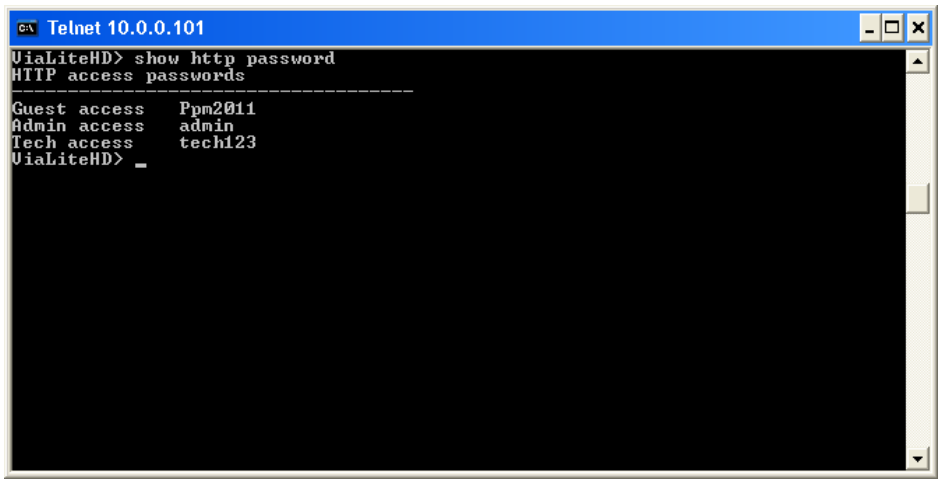




8. Now change the passwords as desired using this the set http password command, as shown below. Note these passwords are case sensitive.

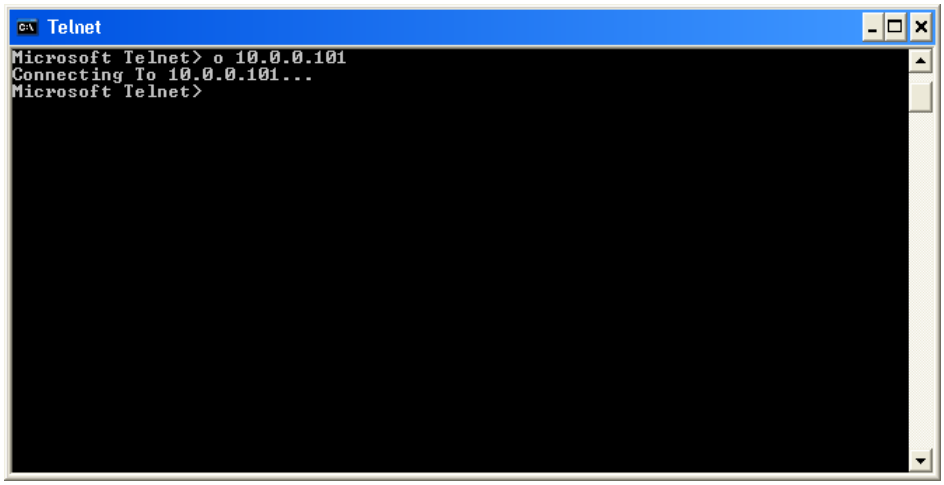


9. You may now confirm the passwords using the “show http password command”

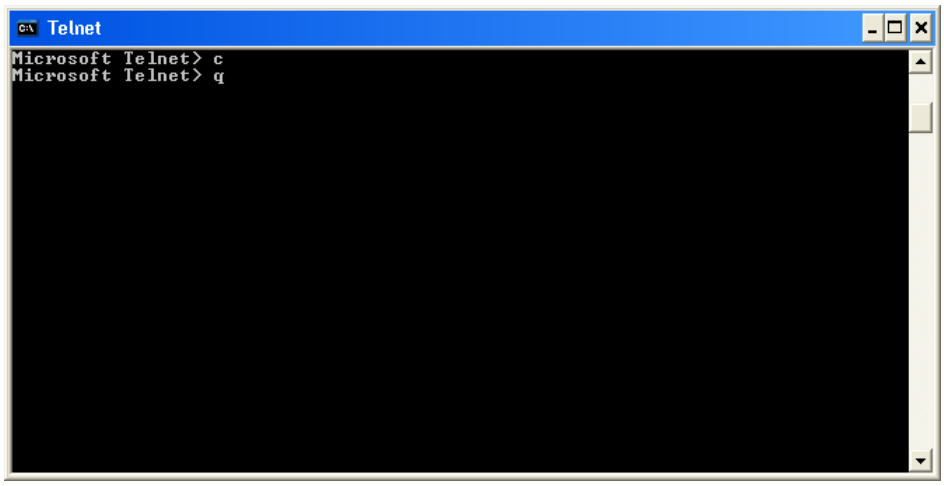


10. You should now log off by typing “logoff” and pressing any key when prompted. Failure to logoff and close the telnet session correctly may impact the card functionality. If this happens it may simply be rectified by a hard reset.

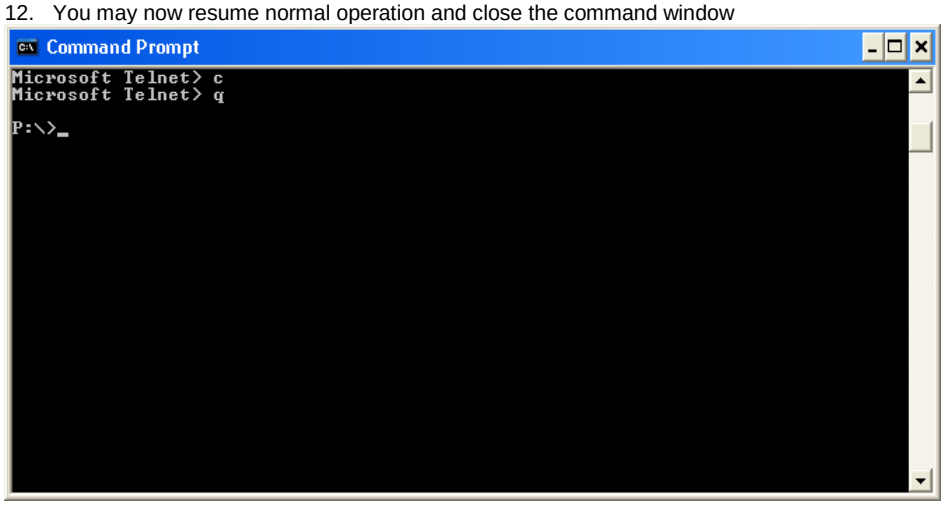
Telnet 10.0.0.101
ViaLiteHD> logoff
Thank you for using ViaLiteHD Management Agent, Goodbye.
Connection to host lost.
Press any key to continue...



11. The telnet session should now be closed, by typing “c” and then “q”



12. You may now resume normal operation and close the command window

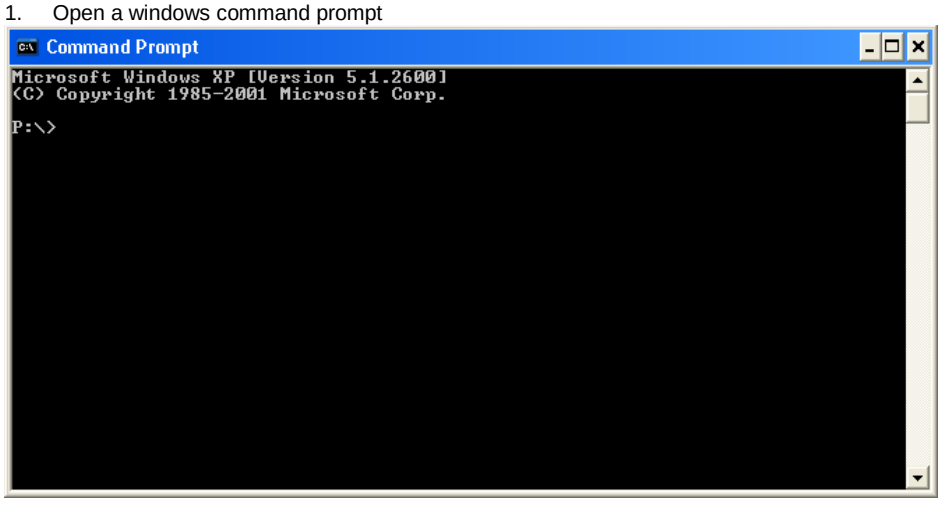


5.5 Other telnet commands

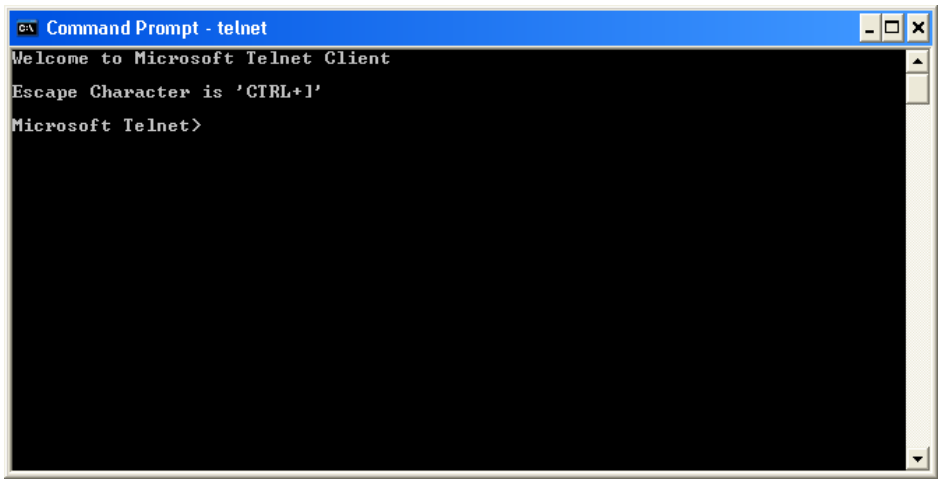
The Telnet interface maybe used for a number of other actions detailed below

To set user access password you must log onto the module using telnet or a similar system

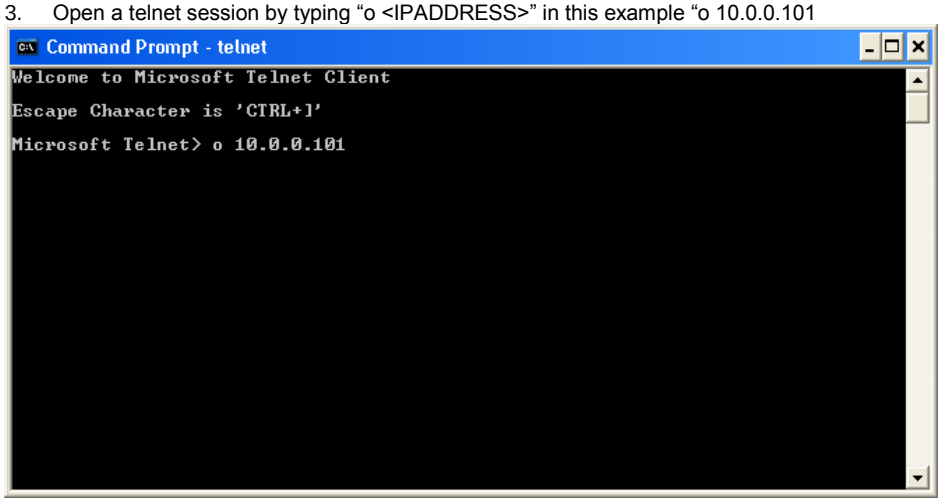
1. Open a windows command prompt



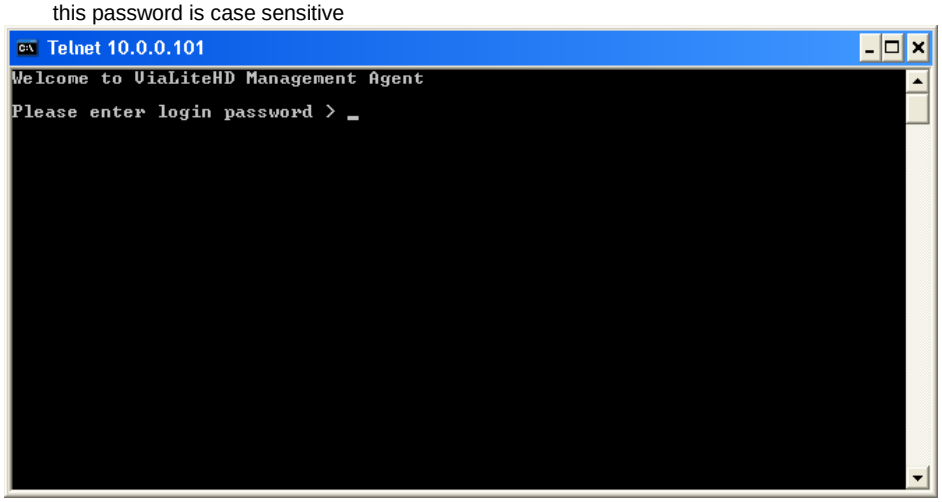
2. Open a telnet session by typing “telnet”



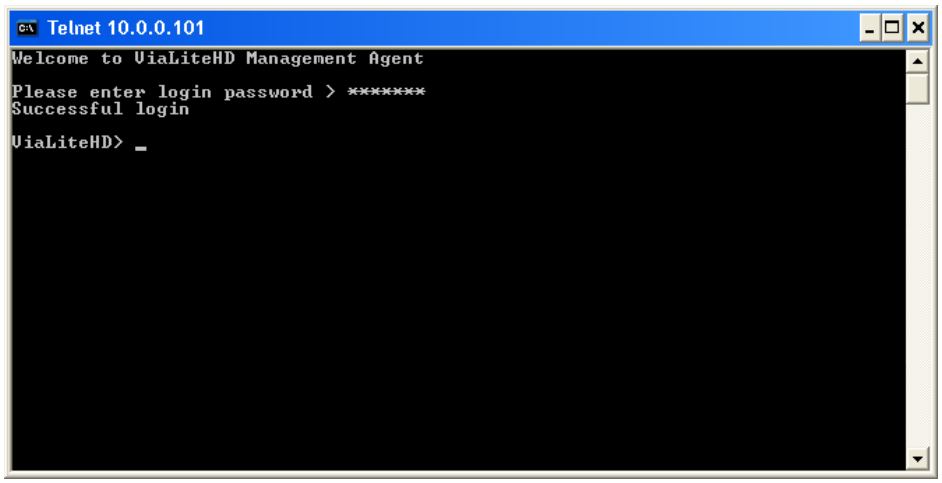
3. Open a telnet session by typing “o <IPADDRESS>” in this example “o 10.0.0.101



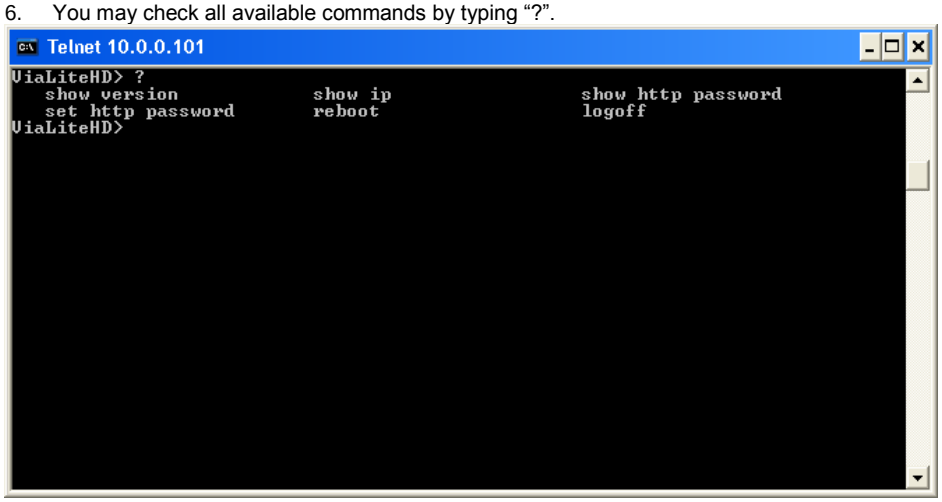
4. You will be prompted for the password this is the same us used or set in section 5.3, by default “**web4270**” (unless changed), note this password is case sensitive



5. When the correct password is entered the unit will display a command prompt “ViaLiteHD”

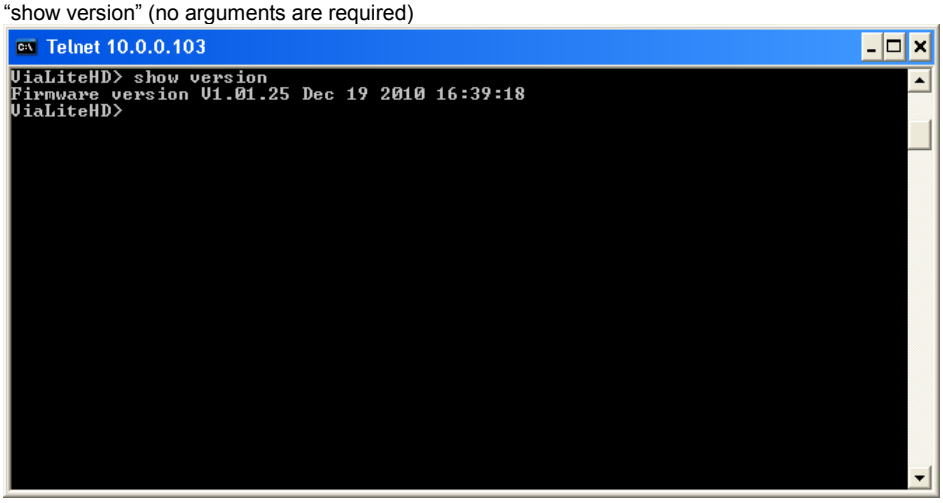


6. You may check all available commands by typing “?”.

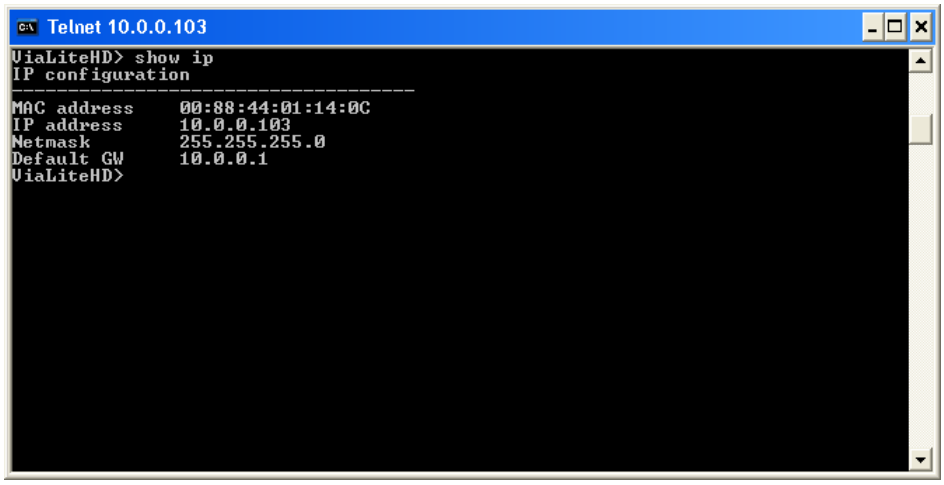


7. The following commands are available detailed below:

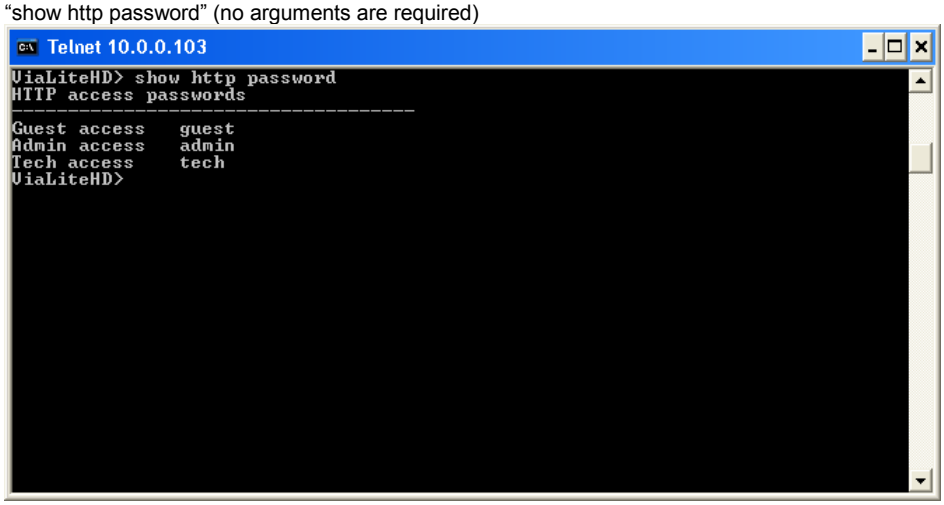
“show version” (no arguments are required)



“show ip” (no arguments are required)



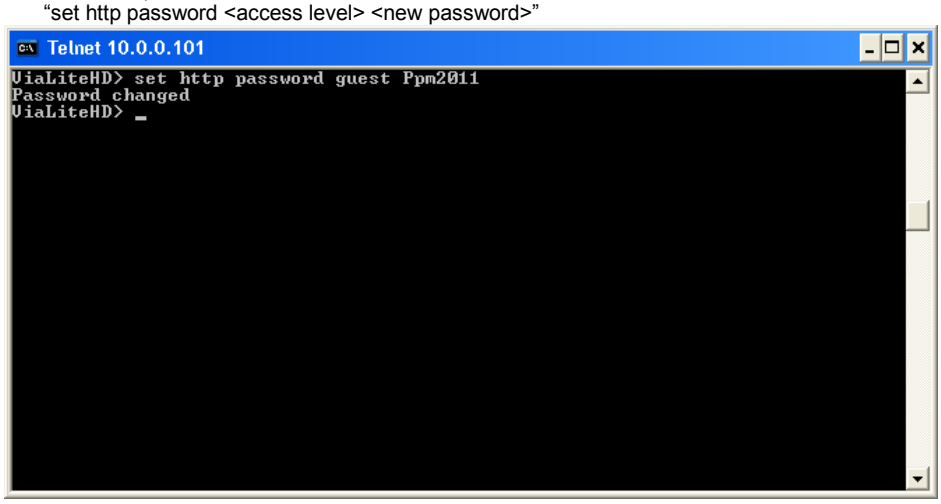
“show http password” (no arguments are required)



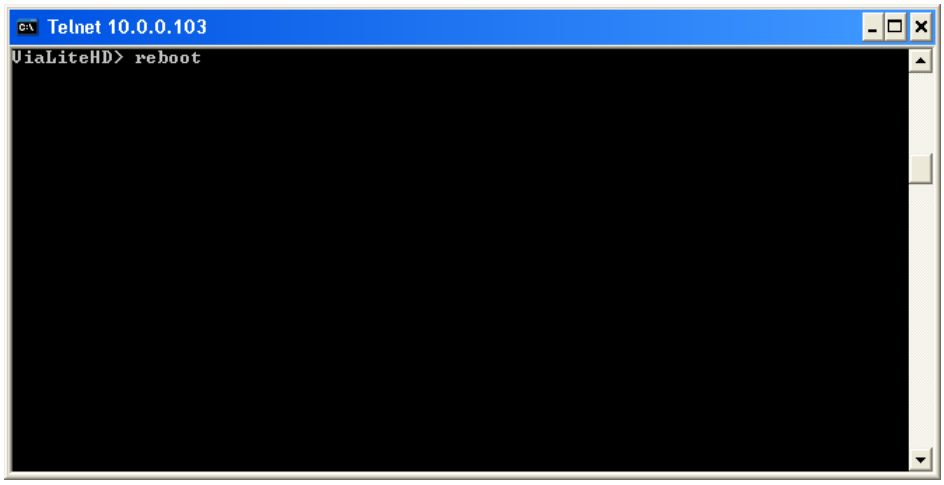
“set http password”

Format required

“set http password <access level> <new password>”

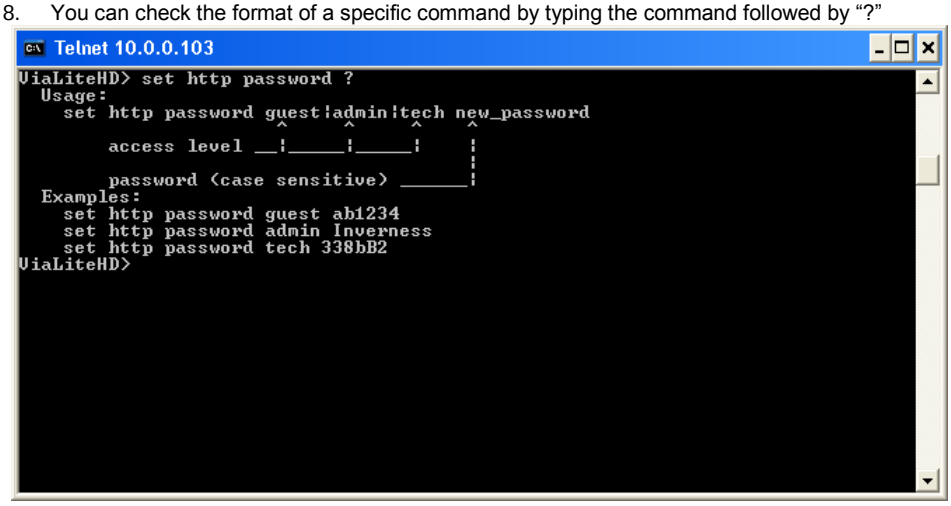


“reboot” (no arguments are required)



"log off" (no arguments are required)

8. You can check the format of a specific command by typing the command followed by "?"



6 Using the web control interface

6.1 Box control conventions

All BUTTONS and ICONS can be activated by a single left click

Some boxes have arrow icons in the top left of the box, these allow the boxes to be maximised or minimised

Many boxes have a hover function. If you hover the point over a module it will display it key information, some boxes with settable parameters will also display their valid range if you hover over them.

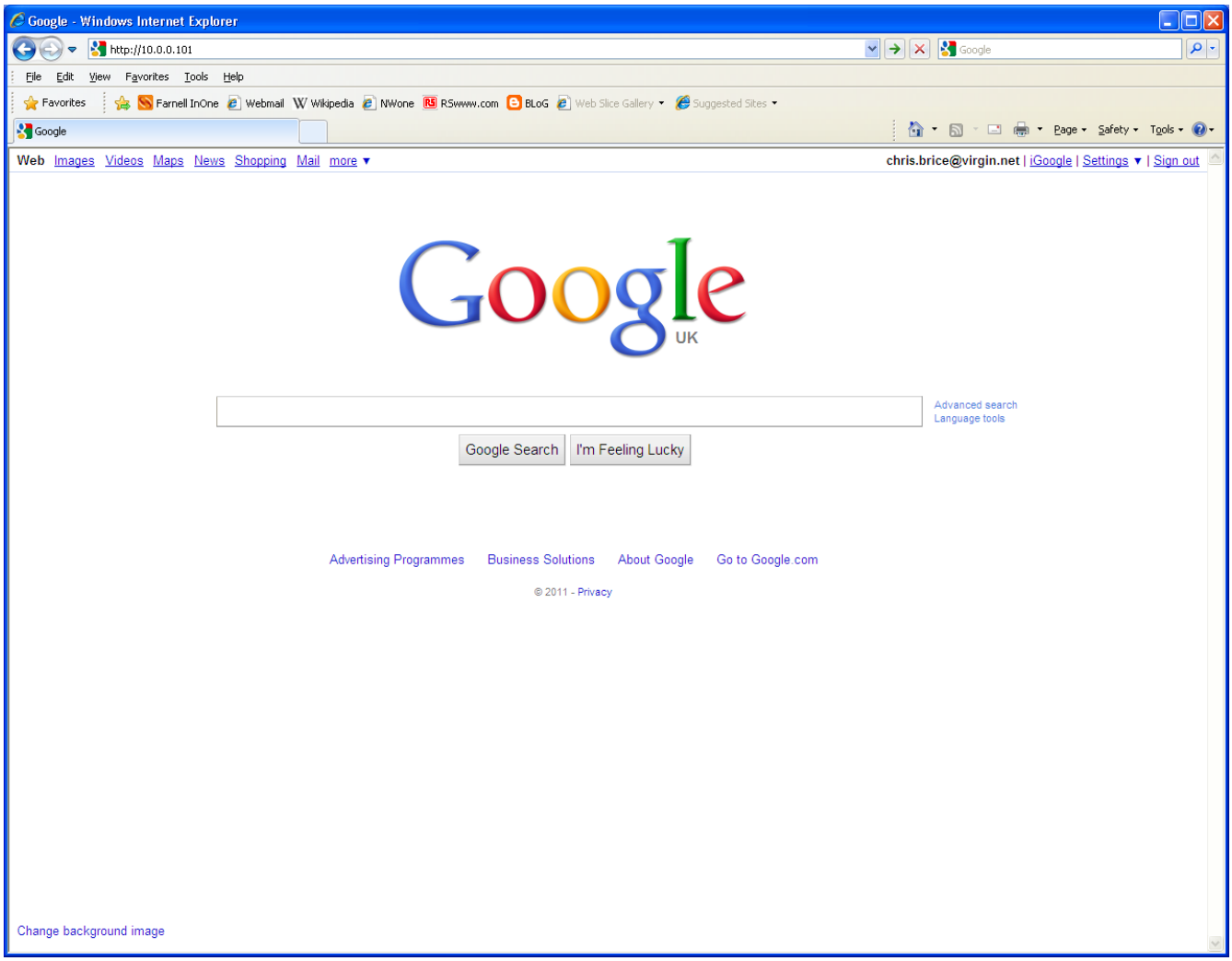
If information is entered as TEXT, NUMBERS, PULL DOWNS you must hit the windows APPLY button to send this information to the controller.

CHANGES SHOULD BE APPLIED INDIVIDUALLY, once implemented the next change should be made. This prevents the possibility of changes overwriting each other or control words being incorrect.

6.2 Opening the web the graphical user interface with a web browser

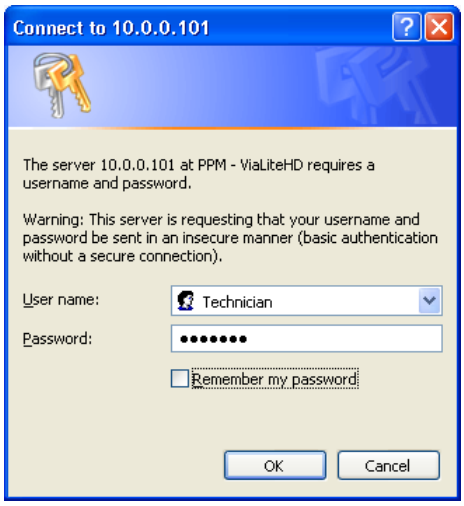
First open a web browser. The web browser must be java enabled and have Java Plug-in 1.6.0 or later loaded, if not you will be prompted to download this.

Type in the IP address of the module, into the browser address line, in this case “10.0.0.101”



After having typed in the module address you will be prompted for the password

Use the USER NAME and PASSWORD that have been set see section 5.3 and 5.4


Connect to 10.0.0.101
The server 10.0.0.101 at PPM - ViaLiteHD requires a username and password.
Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).
User name:
Technician
Password:
Remember my password
OK
Cancel

The graphical user interface web page will now be available.

6.3 Graphical user interface, introduction screen

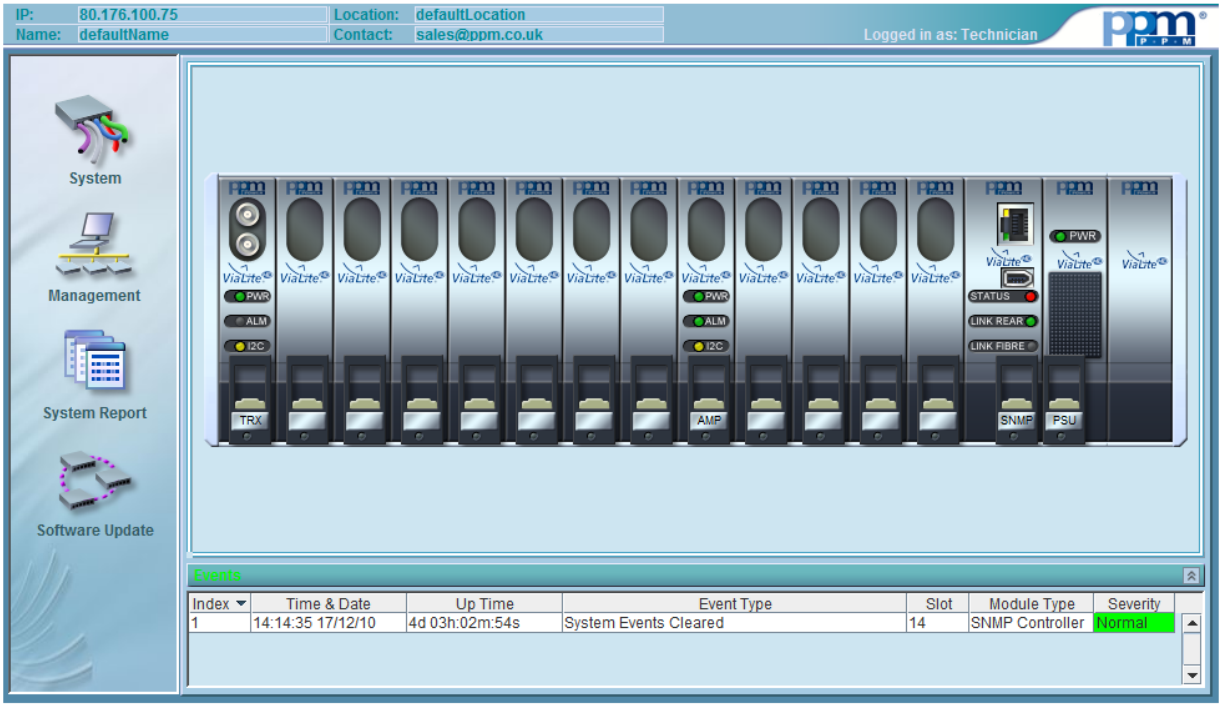
This is the first screen that the web page will open with, it contains all the basic information that you will need

6.4 Top bar

IP address

- Location (this is user definable text and can be entered on the system menu)
- Name (this is user definable text and can be entered on the system menu)
- Contact, manufacturer or suppliers contact information (this is user definable text and can be entered on the system menu)
- Log in name

Note: The IP address is the IP address as seen by the computer. This may be different to the IP address of the SNMP controller if you are accessing via an external network.



6.5 Left side bar

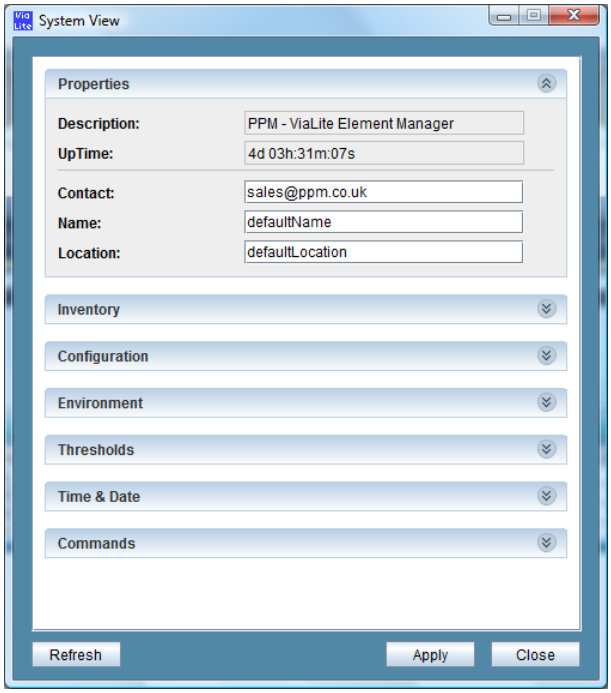
This bar contains views that may be used to set up and read parameters of the SNMP and Web controller

System view – Allow viewing and setting of many controller, power supply and rack chassis parameters
Management – Allows trap destination and MIB version to be set and read
System report – This provides a summary report of the rack chassis and module information
Software update – This allows the SNMP and web controller software to be updated via FTP

6.5.1 Left side bar – System view

To open the system view, left click the system icon on the left side bar

6.5.1.1 Left side bar – System view, properties



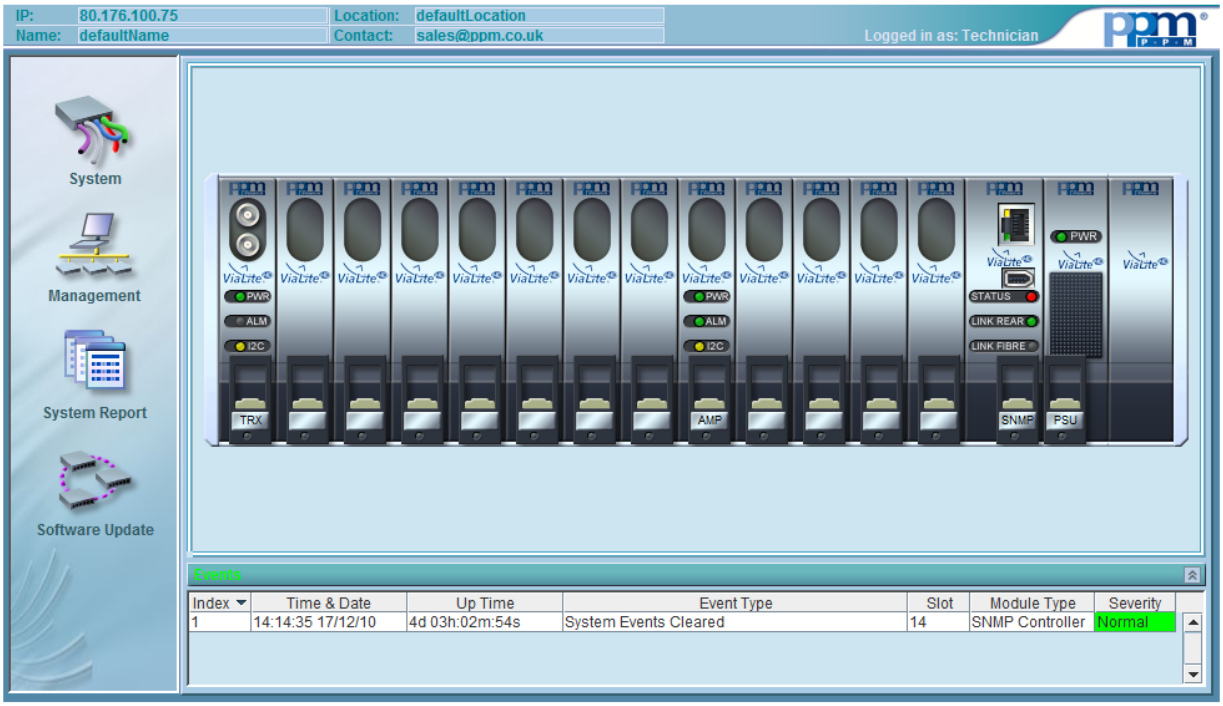
System view - Properties box

Description – This preset text described the module function
Uptime – This reports the running time of the SNMP and web controller since the last reset
Contact - This is USER definable text and can be entered on this screen, it defaults to PPM contact details
Name - This is USER definable text (up to 30 characters) and can be entered on this screen, it defaults to “defaultName”
Location - This is USER definable text (up to 30 characters) and can be entered on this screen, it defaults to “defaultLocation”

Note: Contact, name and location will be preserved during a system reset.

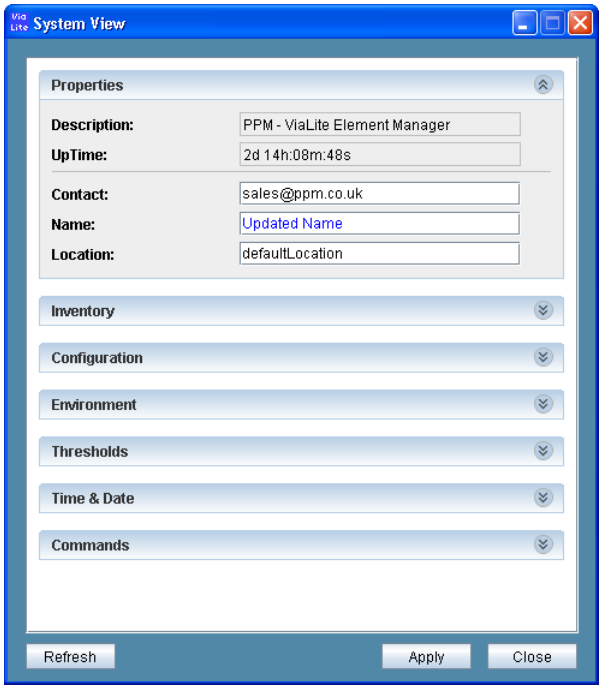
6.5.1.2 Left side bar – System view, properties, changing contact, name or location

To change contact, name or location:

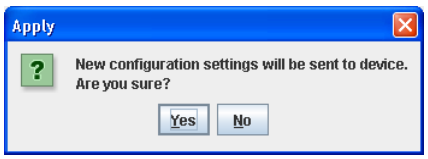


1. Left click the SYSTEM icon on the left side bar, this opens the system view box

2. The properties box will already be maximised box



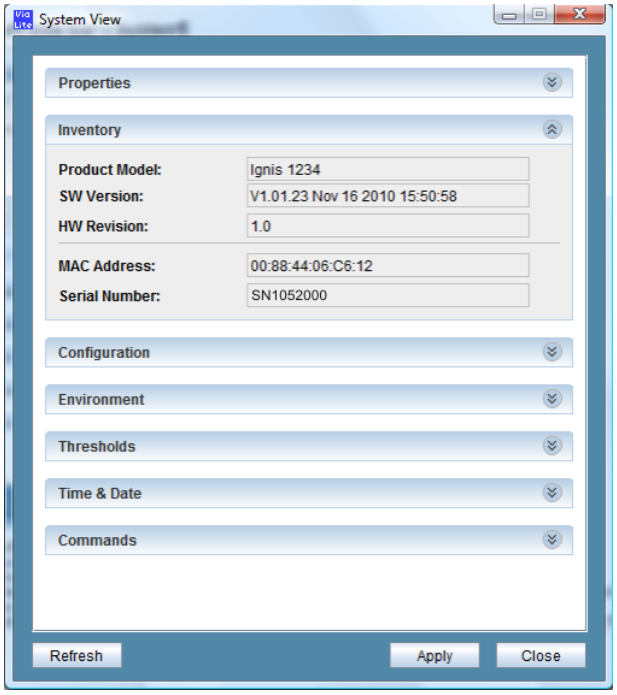
3. Next click the box that you wish to update, enter the text
4. When the text has been input, click the apply button



5. You will be asked to confirm the action, click YES if you are sure

6. The change will now be in effect.

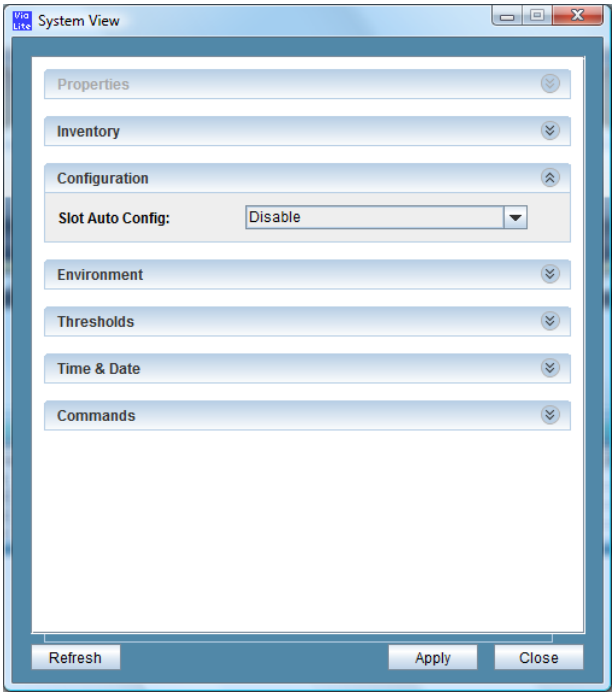
6.5.1.3 Left side bar – System view, inventory



System view - Inventory box

Product model – This give the basic hardware model number
SW version – This gives the version number of the GUI software loaded on the card
Hardware revision – This gives the revision number of the SNMP and web controller hardware
MAC address – This gives the MAC address of the SNMP and web controller hardware
Serial number – This gives the serial number of the SNMP and web controller hardware

6.5.1.4 Left side bar – System view, configuration

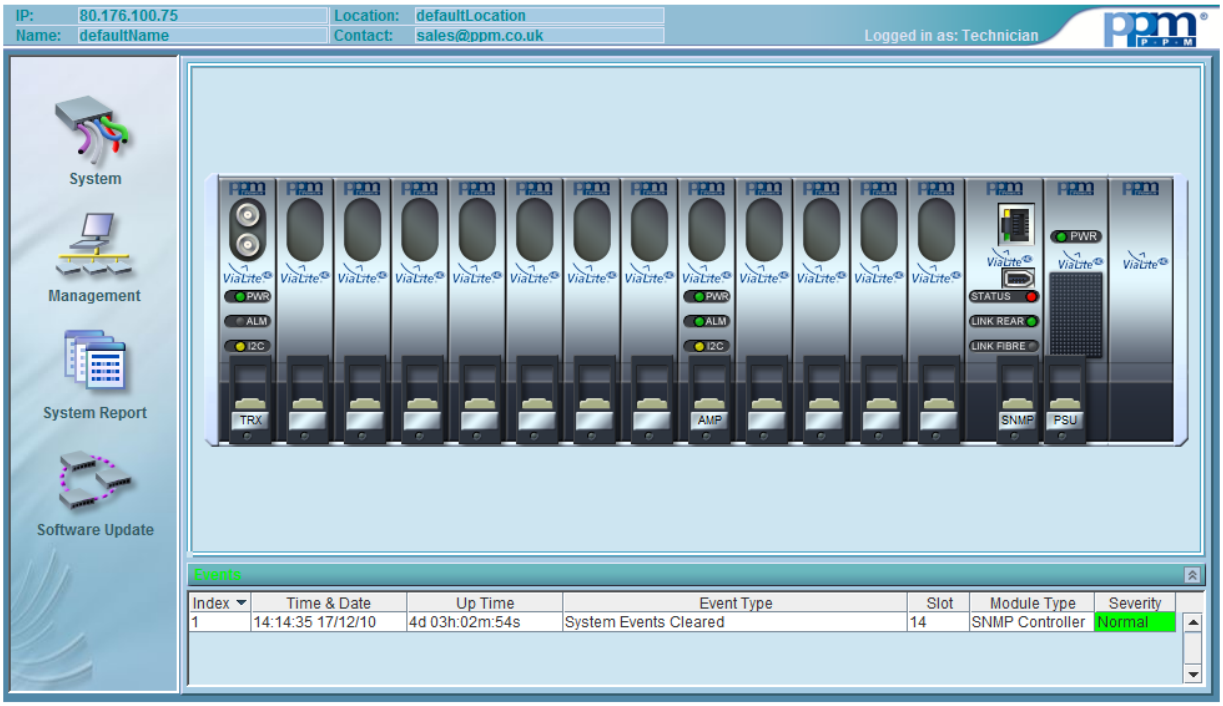


System view - Configuration box

Slot auto config – This is a USER settable option that allows the slot auto configuration option to be turned ON and OFF.By default this feature is switched OFF. Full details of this special software feature are given in section 2.5.

6.5.1.5 Left side bar – System view, configuration, changing slot auto configuration

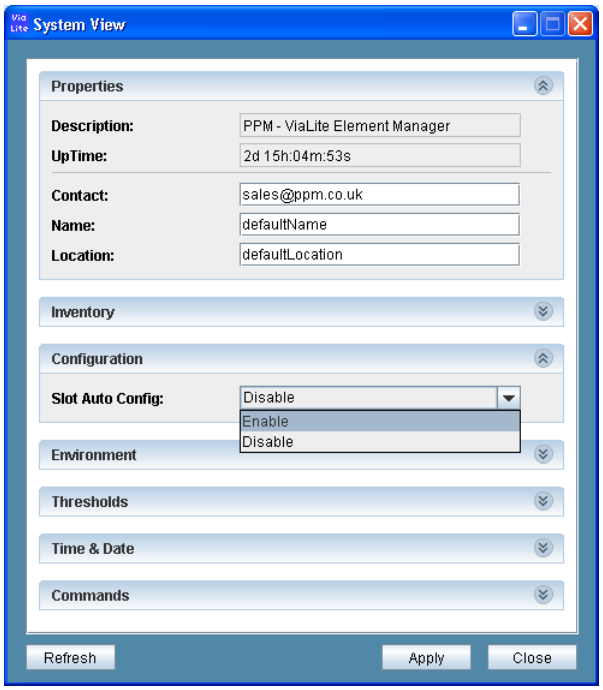
To change the Auto slot configuration:



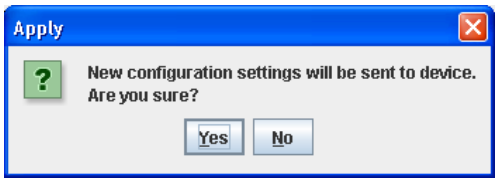
1. Left click the SYSTEM icon on the left hand bar

2. Click the arrow on the right of the configuration box to maximise this box

3. Select from the pull down menu the desired status for the slot auto configuration

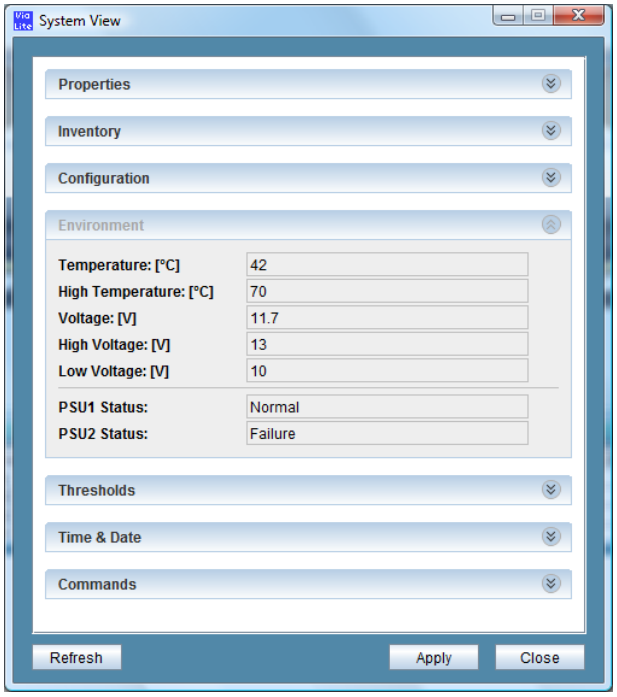


4. After having selected the mode, click on the windows apply button



5. You will be asked to confirm the action, click YES if you are sure
6. The change will take effect on the next polling cycle of the slot

6.5.1.6 Left side bar – System view, environment

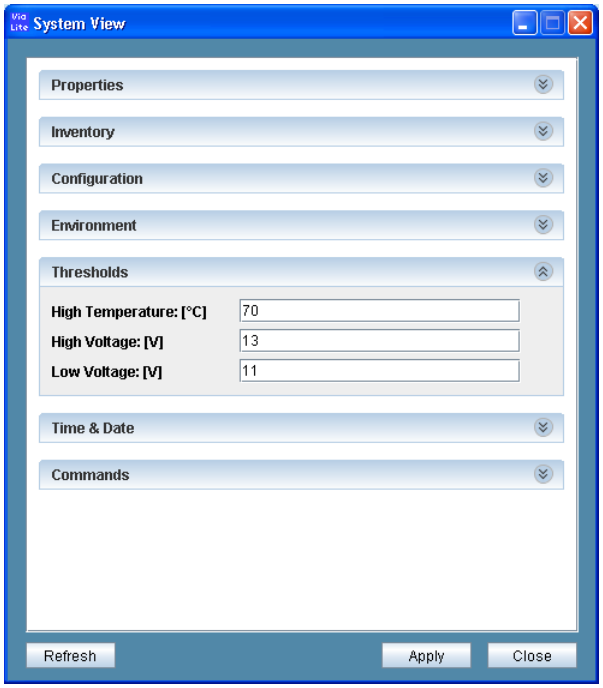


System view –Environment box

Temperature – This reports the temperature measured on the SNMP and web controller card.
Note: typically this is 15 - 20 degrees above the rack chassis ambient temperature.
High temperature – This reports the high temperature threshold, a reported temperature above the threshold will generate a "system temperature alarm". The threshold cannot be set in this window.
Voltage – This reports the rack chassis backplane voltage
High voltage - This reports the high voltage threshold, a reported voltage above the threshold will generate a "system voltage alarm". The threshold cannot be set in this window.
Low voltage - This reports the low voltage threshold, a reported voltage above the threshold will generate a "system voltage alarm". The threshold cannot be set in this window.
PSU1 status – This reports the stats of the power supply in rack chassis slot 15, its status can be NORMAL or FAILURE
PSU2 status – This reports the stats of the power supply in rack chassis slot 16, its status can be NORMAL or FAILURE

Note. As the PSU is unintelligent a status of FAILURE may be due to a real hardware failure or an unfitted PSU.

6.5.1.7 Left side bar – System view, thresholds



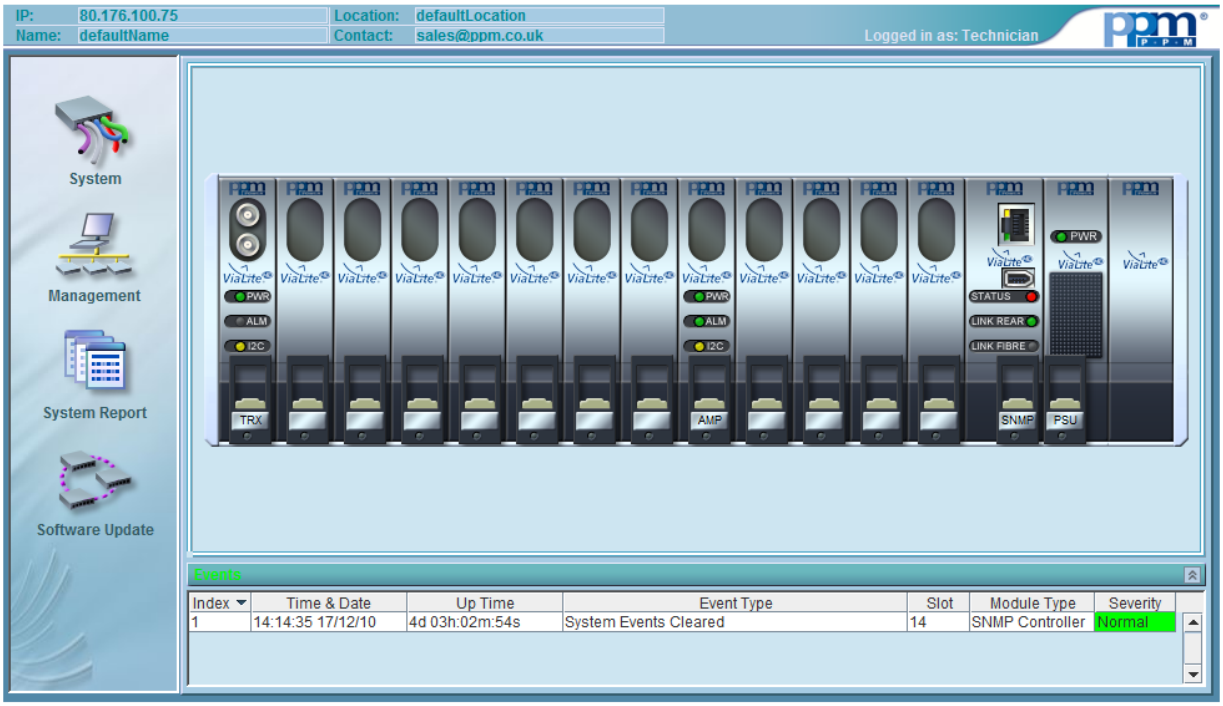
System view – Thresholds

High temperature – This is a USER settable threshold, it maybe between 20 and 99, by DEFAULT it is set to 70 degrees centigrade.
High voltage - This is a USER settable threshold, it maybe between 12 and 15, by DEFAULT it is set to 13 volts
Low voltage - This is a USER settable threshold, it maybe between 9 and 12, by DEFAULT it is set to 11 volts

Note: Temperature and voltage thresholds will be preserved during a system reset.

6.5.1.8 Left side bar – System view, thresholds, changing thresholds

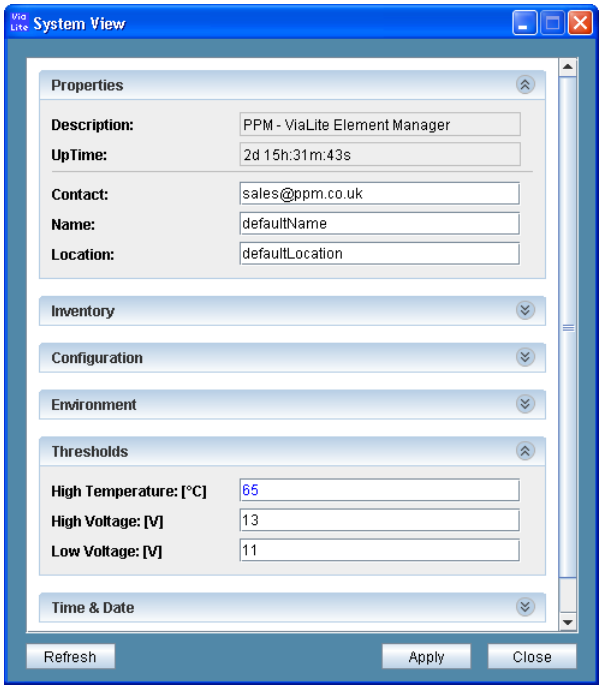
To change any of the threshold values:



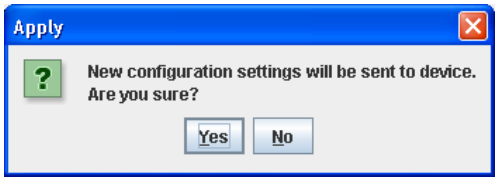
1. Left click the SYSTEM icon on the left hand bar

2. Click the arrow on the right of the thresholds box to maximise this box

3. Next click the box that you wish to update, enter the value

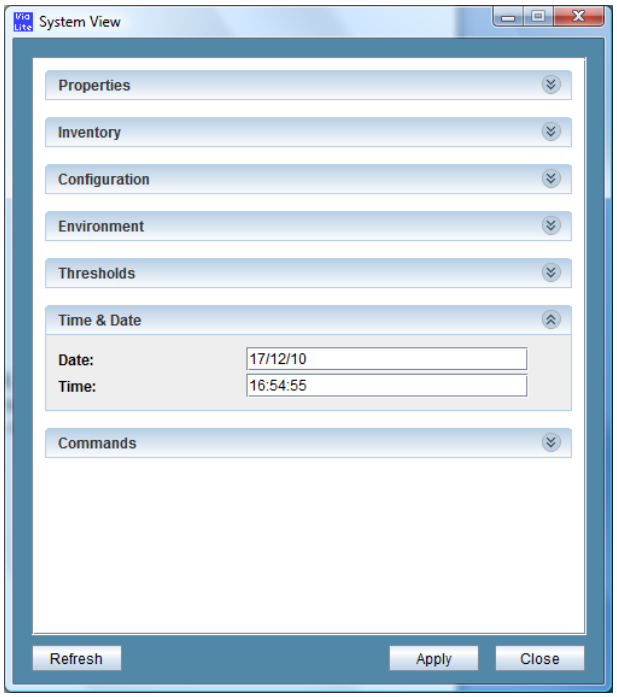


4. When the value has been input, click the apply button



5. You will be asked to confirm the action, click YES if you are sure
6. The change will take effect on the next polling cycle of the slot

6.5.1.9 Left side bar – System view, time and date



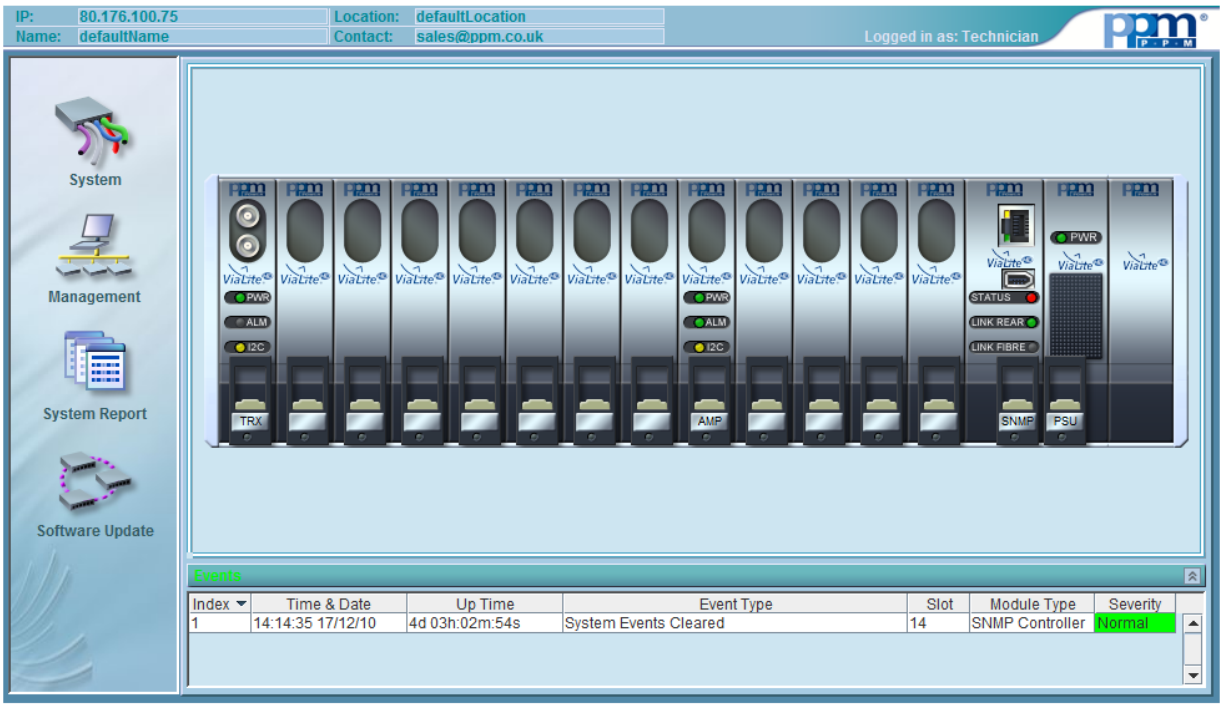
System view – Time and date

Date – This is a USER settable date, it in the format DD/MM/YY.
Time - This is a USER settable time, it in the format HH/MM/SS in a 24 hour format.

Note: The unit is equipped with a real time clock, which will preserve time and date in the event of a power outage or short storage period.
Note: Time and date will be preserved during a system reset.

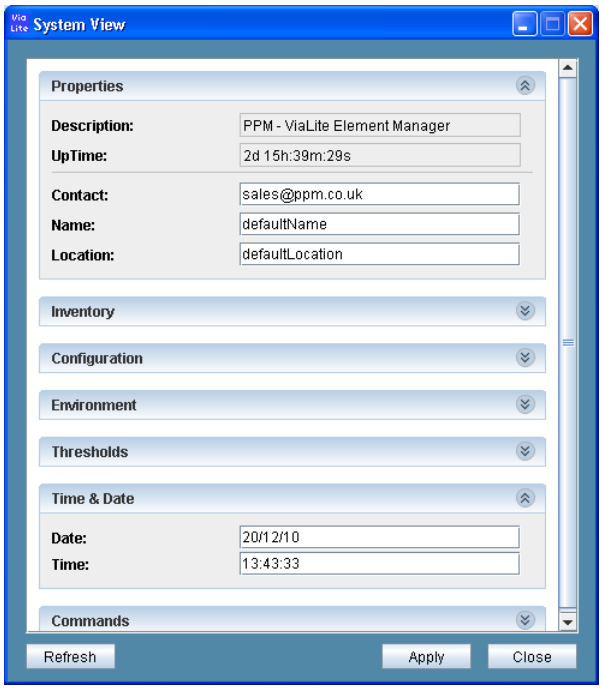
6.5.1.10 Left side bar – System view, time and date, changing the time or date

To change the time or date:

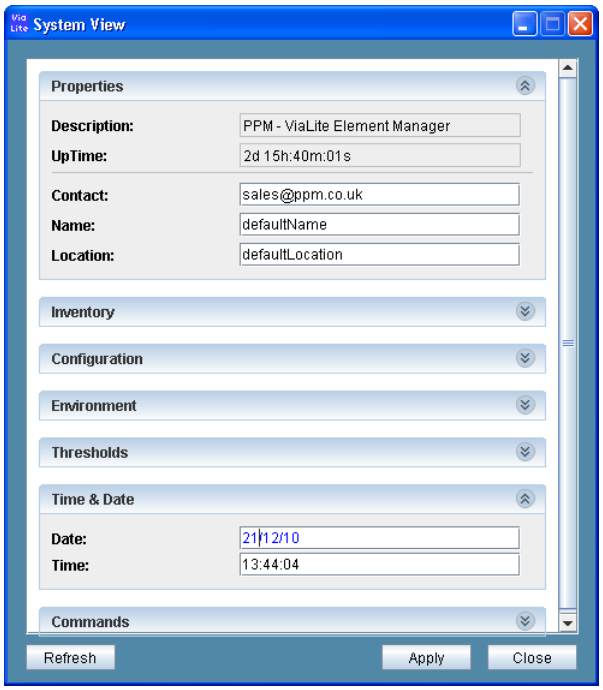


1. Left click the SYSTEM icon on the left hand bar

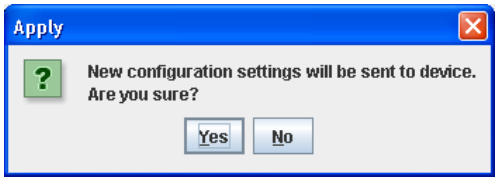
2. Click the arrow on the right of the time and date box to maximise this box



3. Next click the box that you wish to update, enter the value

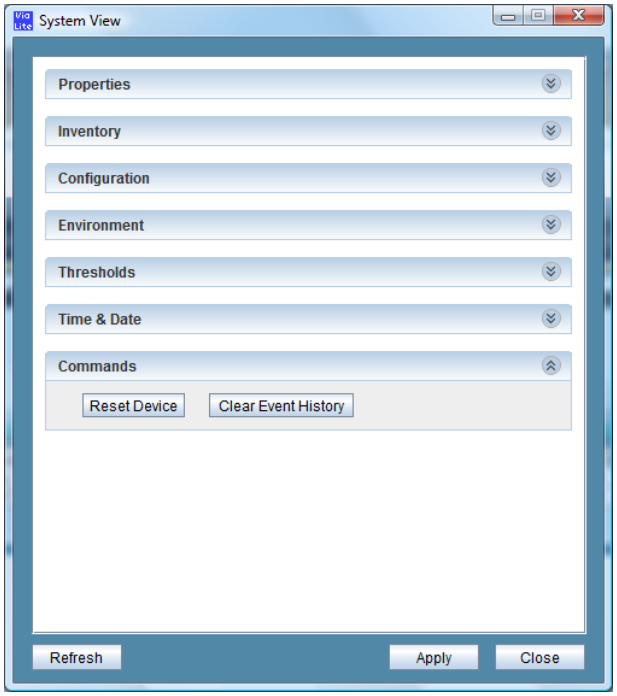


4. When the value has been input, click the apply button



5. You will be asked to confirm the action, click YES if you are sure
6. The change will take effect on the next polling cycle of the slot

6.5.1.11 Left side bar – System view, commands



System view – Time and date

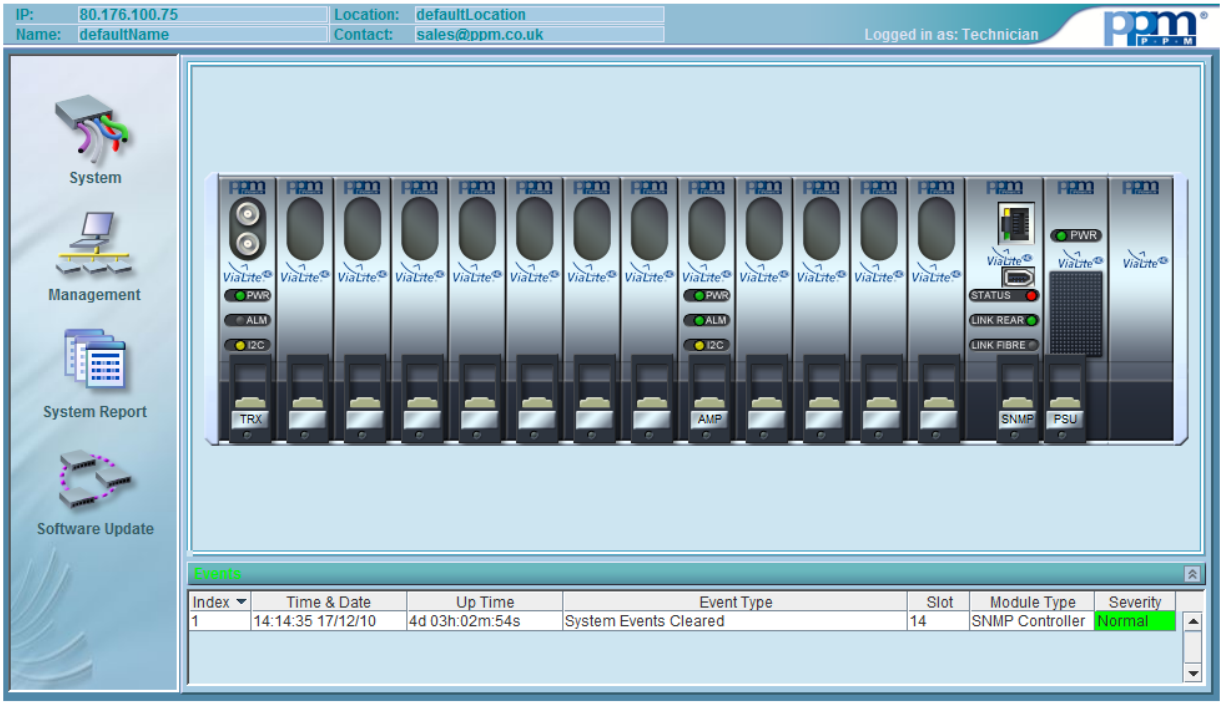
Reset device – This allows you to perform a soft reset on the SNMP and web controller card, before reset you will be prompted to confirm the action. A reset typically takes about 20 seconds. The reset does not clear the event history.

Clear event history - This allows you to clear the event history of the SNMP and web controller card, before clearing you will be prompted to confirm the action. The first event displayed after clearing the event log is “system events cleared”.

Note: You cannot clear the event log if there are no other events.

6.5.1.12 Left side bar – System view, commands, soft resetting the SNMP module

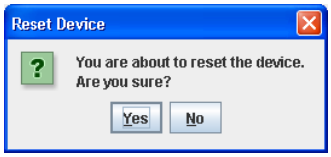
To perform a soft reset on the SNMP and web controller:



1. Left click the SYSTEM icon on the left hand bar

2. Click the arrow on the right of commands to maximise this box

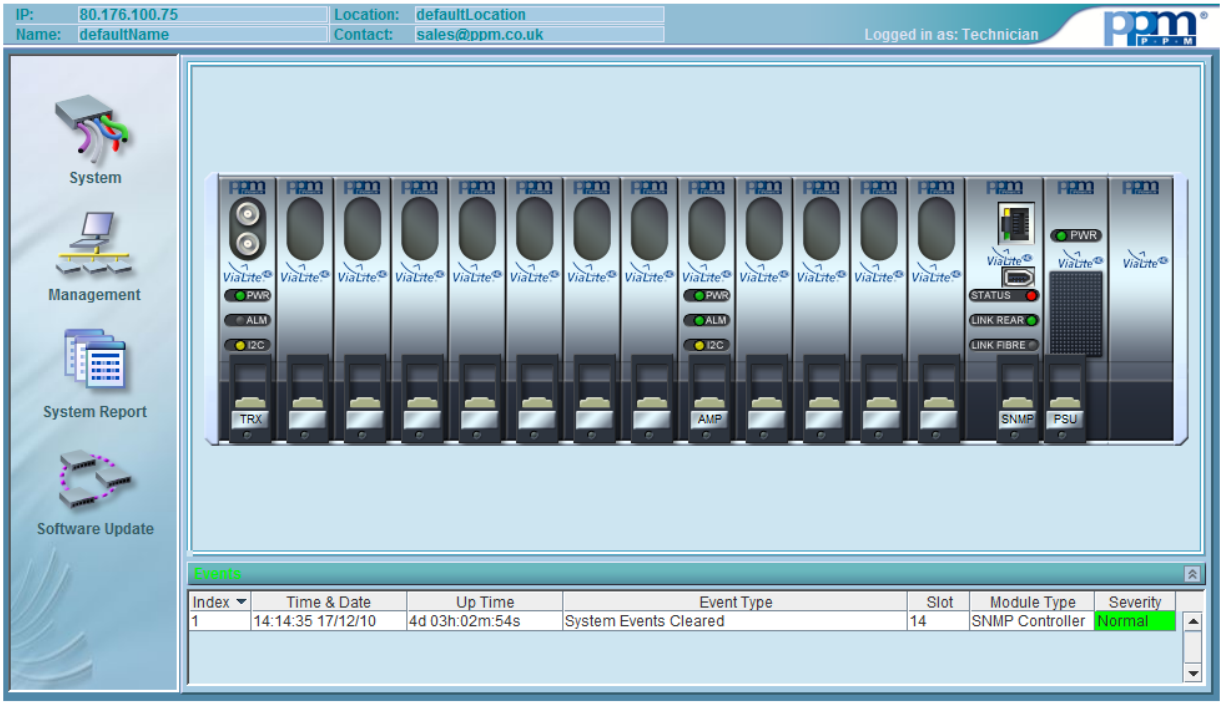
3. Next click the RESET DEVICE button



4. You will be asked to confirm the action, click YES if you are sure
5. The SNMP and web controller will be reset, it typically takes 30 second to perform this action

6.5.1.13 Left side bar – System view, commands, clearing event history

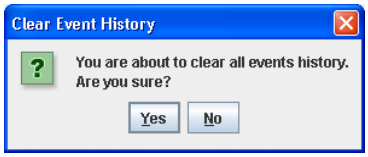
To clear the event history of the SNMP and web controller:



1. Left click the SYSTEM icon on the left hand bar

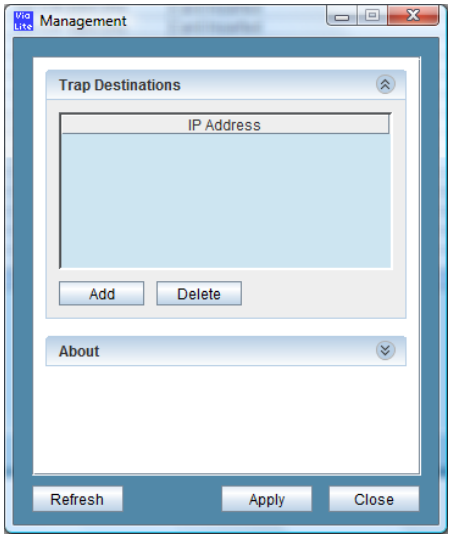
2. Click the arrow on the right of COMMANDS to maximise this box

3. Next click the CLEAR EVENT HISTORY button



4. You will be asked to confirm the action, click YES if you are sure
5. The first event recorded after this action will be SYSTEM EVENTS CLEARED

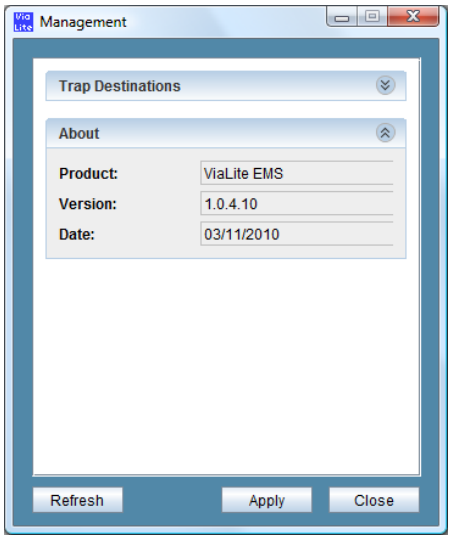
6.5.2 Left side bar – Management



The management icon allows you to set up to 5 trap destinations.

The traps are displayed in the IP address box

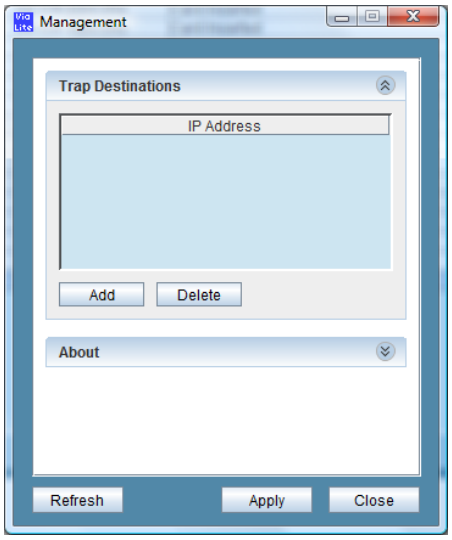
The about button maybe used to show the MIB software details



System view – Time and date

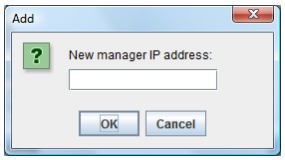
Product – This preset text described the product type
Version – This gives the version number of the MIB software loaded on the card
Date – This gives the revision date of the MIB software loaded on the card

6.5.2.1 Left side bar – Management, adding a trap



To add a trap:

1. Click the Add box, the box below will appear

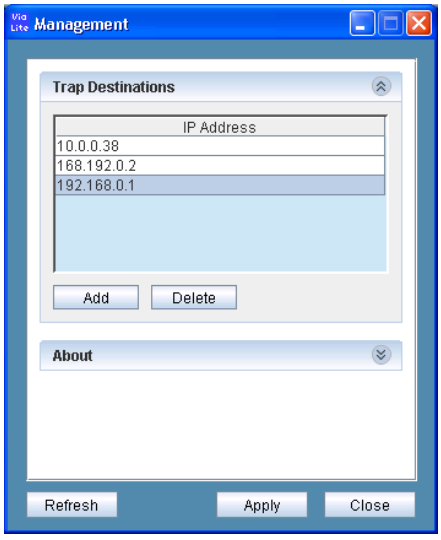


2. Type in the IP address which you wish to use as a trap destination
3. Click okay, the trap is now set

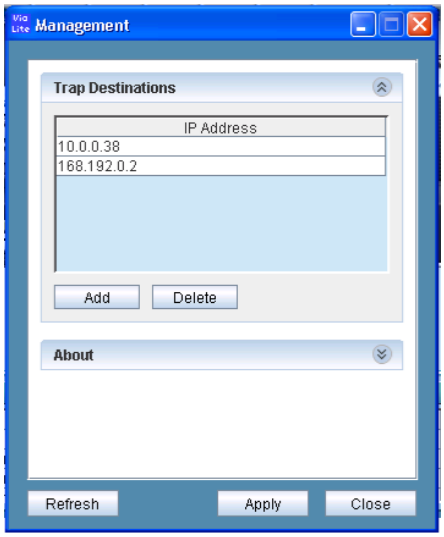
6.5.2.2 Left side bar – Management, deleting a trap

To delete a trap:

1. You can delete trap address by selecting the IP address from the IP address window, it will be highlighted.



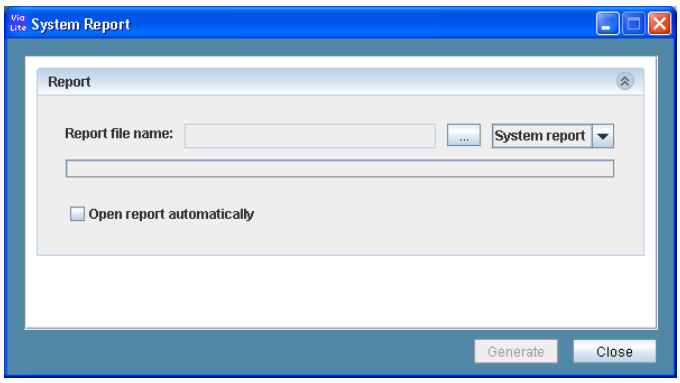
2. Then clicking on the Delete button



3. The Trap has now been deleted, repeat the process for any other unwanted traps

6.5.3 Left side bar – System report

The system report is a tool that allows you to run either a status report on the modules that are corrected to the same rack chassis as the SNMP and web controller, or to report all the stored events. Both reports are exported as an HTML files.



System report

Report file name – This displays the file name for the report file
Pull down menu – This allows you to choose either a SYSTEM REPORT or an EVENTS REPORT
Open report automatically - If this box is CHECKED your web browser will automatically open the report after it is generated

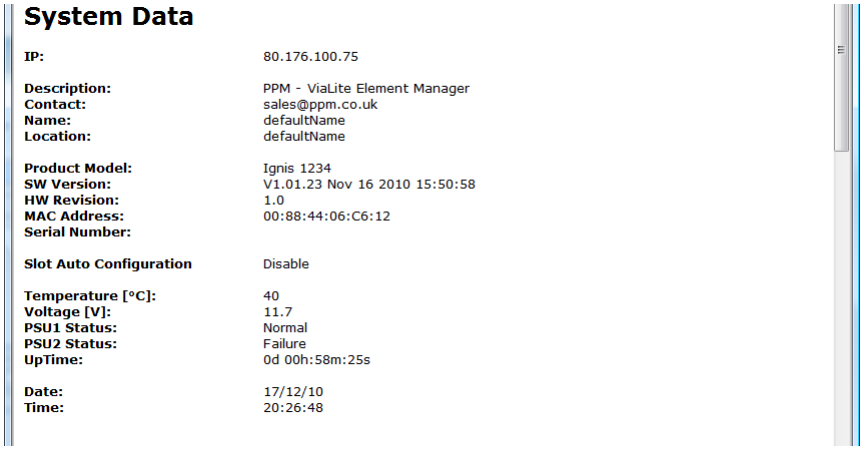
The SYSTEM REPORT consists of a number of sections these are detailed in the following sections

6.5.3.1 Left side bar – System report, format, header

This contain the report title time and date

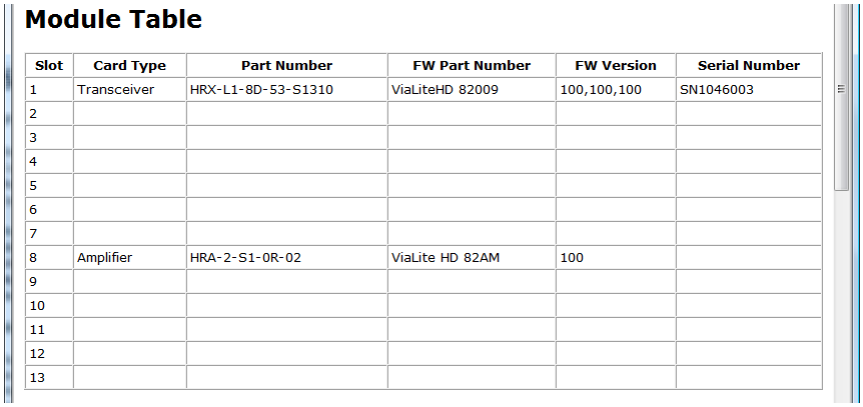
6.5.3.2 Left side bar – System report, format, system data

This contain all the basic information about the rack chassis SNMP and web controller and power supplies



6.5.3.3 Left side bar – System report, format, module table

This contains summary information on all the other modules in the rack chassis

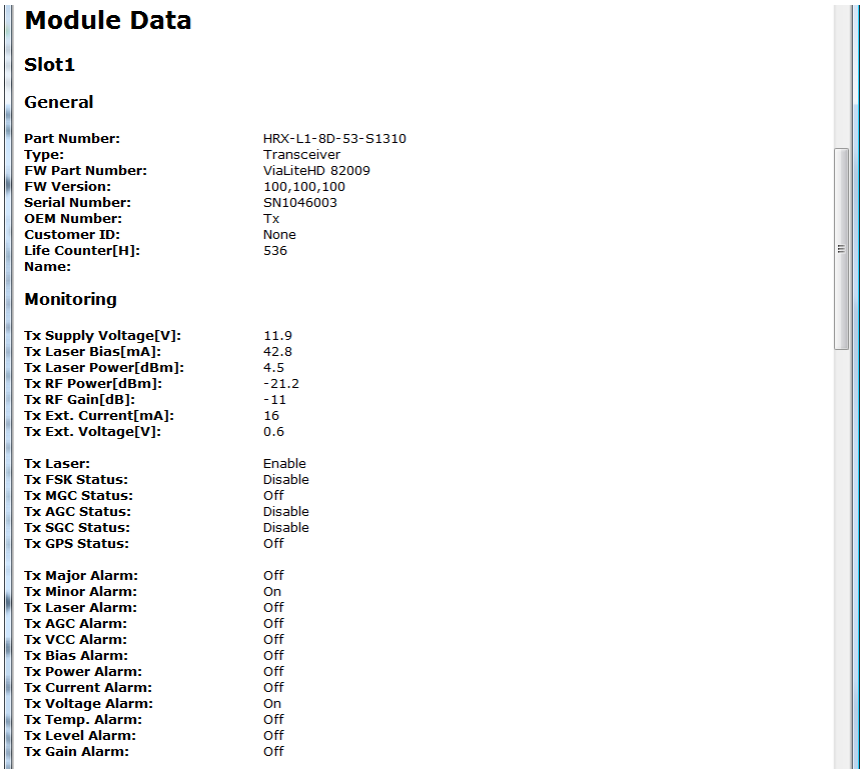


Module Table

Slot	Card Type	Part Number	FW Part Number	FW Version	Serial Number
1	Transceiver	HRX-L1-8D-53-S1310	ViaLiteHD 82009	100,100,100	SN1046003
2					
3					
4					
5					
6					
7					
8	Amplifier	HRA-2-S1-0R-02	ViaLite HD 82AM	100	
9					
10					
11					
12					
13					

6.5.3.4 Left side bar – System report, format, module data

Module data – This contain detail information on each module fitted in the rack chassis, unpopulated slots are not reported.



Module Data

Slot1

General

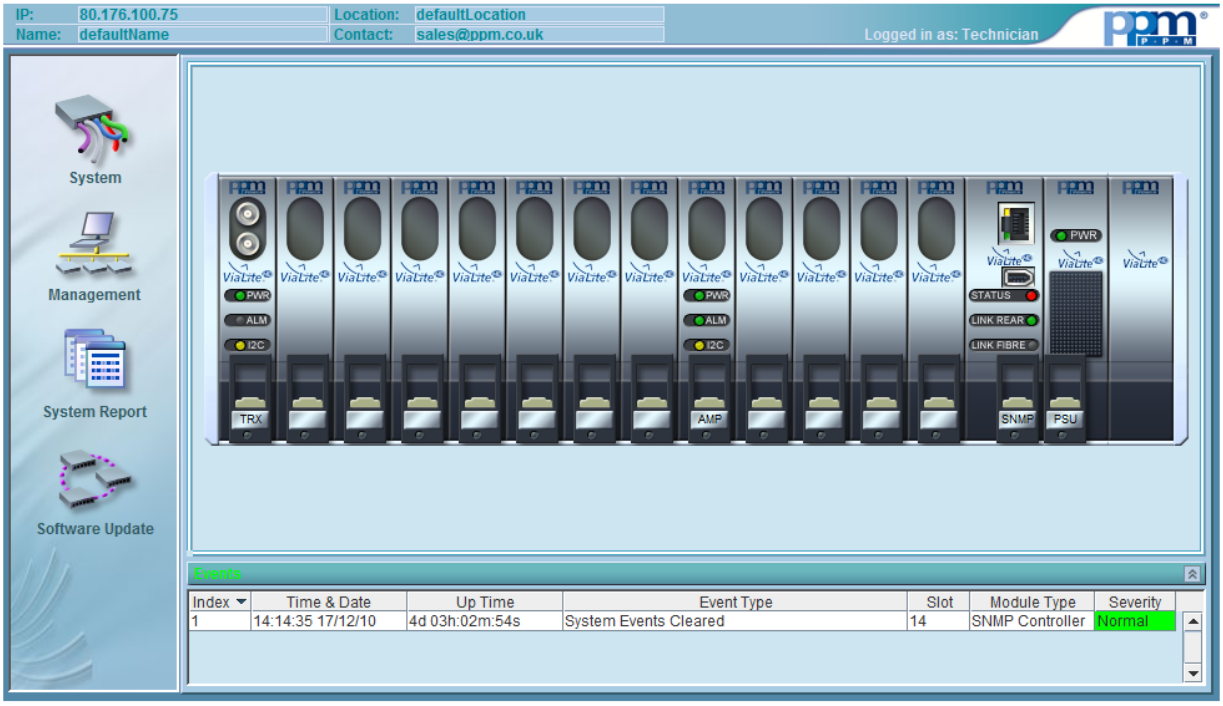
Part Number:	HRX-L1-8D-53-S1310
Type:	Transceiver
FW Part Number:	ViaLiteHD 82009
FW Version:	100,100,100
Serial Number:	SN1046003
OEM Number:	Tx
Customer ID:	None
Life Counter[H]:	536
Name:	

Monitoring

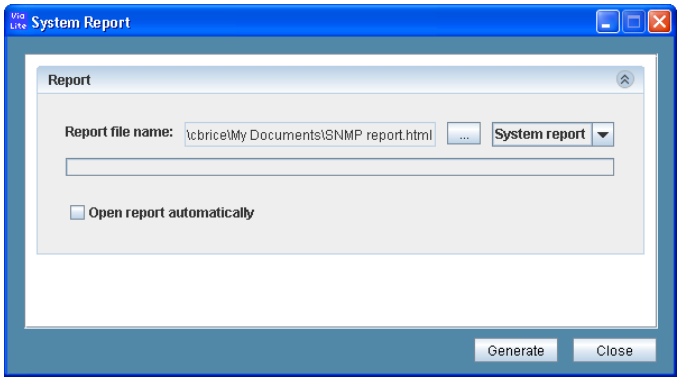
Tx Supply Voltage[V]:	11.9
Tx Laser Bias[mA]:	42.8
Tx Laser Power[dBm]:	4.5
Tx RF Power[dBm]:	-21.2
Tx RF Gain[dB]:	-11
Tx Ext. Current[mA]:	16
Tx Ext. Voltage[V]:	0.6
Tx Laser:	Enable
Tx FSK Status:	Disable
Tx MGC Status:	Off
Tx AGC Status:	Disable
Tx SGC Status:	Disable
Tx GPS Status:	Off
Tx Major Alarm:	Off
Tx Minor Alarm:	On
Tx Laser Alarm:	Off
Tx AGC Alarm:	Off
Tx VCC Alarm:	Off
Tx Bias Alarm:	Off
Tx Power Alarm:	Off
Tx Current Alarm:	Off
Tx Voltage Alarm:	On
Tx Temp. Alarm:	Off
Tx Level Alarm:	Off
Tx Gain Alarm:	Off

6.5.3.5 Left side bar – System report, generating a system report

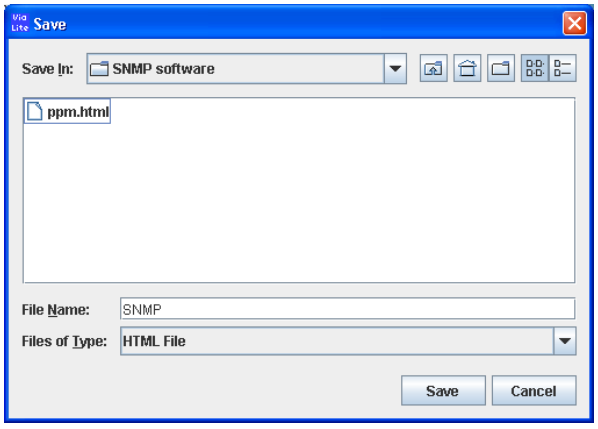
To generate the system report



1. Left click the SYSTEM REPORT icon on the left hand bar

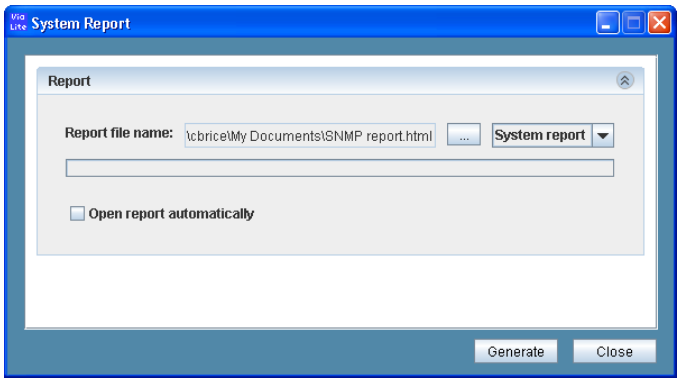


2. Click the "…" button on the right of the report file name box



3. Navigate to the directory in which you wish to save the report
4. Type a file name into the "file name" box
5. File type cannot be changed it will always generate an HTML file
6. Then click save

7. Check that SYSTEM REPORT is selected in the pull down menu



8. If you wish your web browser to automatically open the report after it is generated CHECK the “open report automatically”
9. Now click the generate button

6.5.3.6 Left side bar – Event report, format, header

This contain the report title time and date

ViaLite EMS Events report - 11/02/11 16:46

6.5.3.7 Left side bar – Event report, format, events table

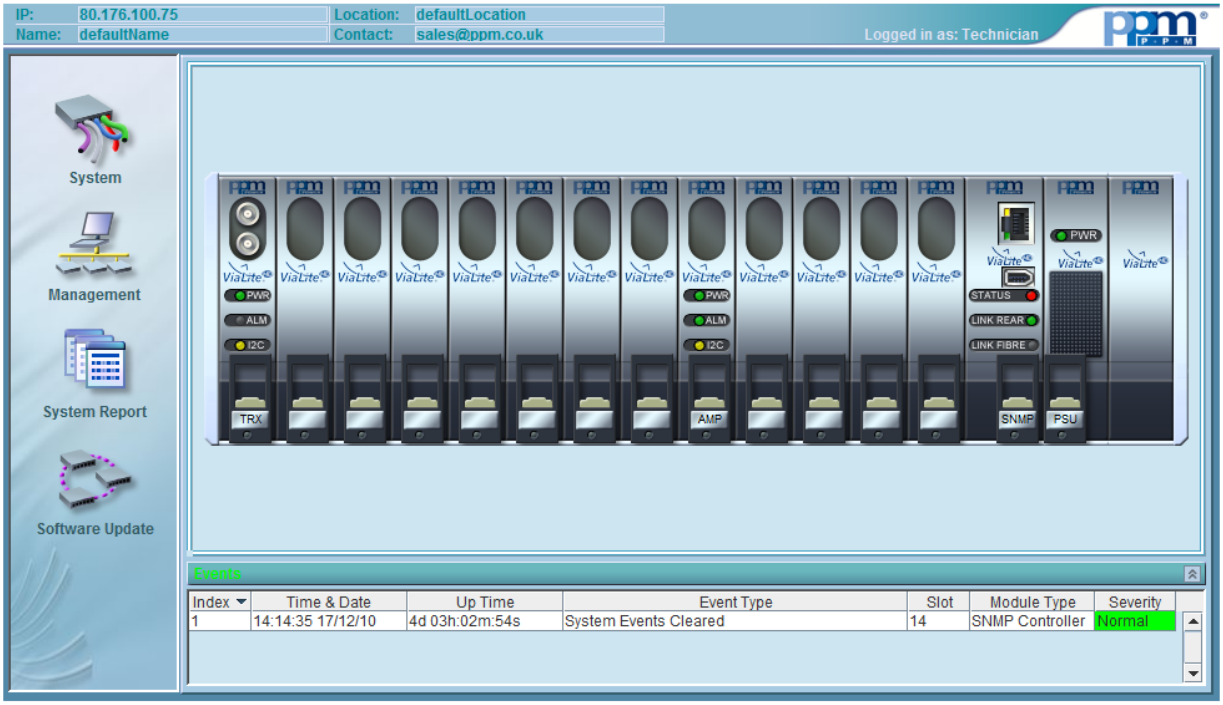
This contain all the stored event information in a similar format to the GUI

Events Table

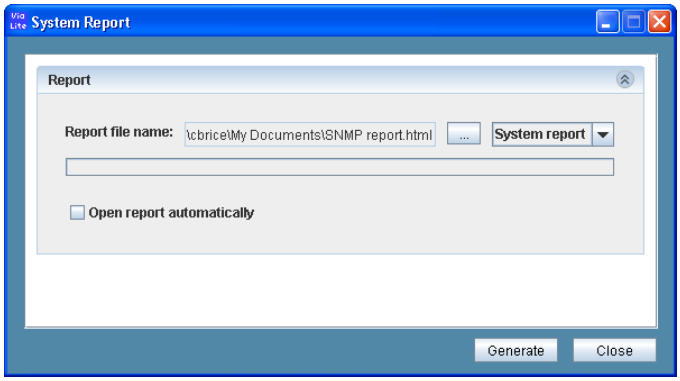
Index	Time & Date	Up Time	Event Type	Slot	Module Type	Severity
1	15:15:56 11/02/11	0d 00h:20m:34s	System Events Cleared	14	SNMP Controller	Normal
2	15:16:13 11/02/11	0d 00h:20m:52s	Major Alarm	1	Receiver	Major
3	15:16:13 11/02/11	0d 00h:20m:52s	RLL Alarm	1	Receiver	Major
4	15:16:15 11/02/11	0d 00h:20m:54s	Major Alarm	6	Transmitter	Major
5	15:16:15 11/02/11	0d 00h:20m:54s	Minor Alarm	6	Transmitter	Minor
6	15:16:15 11/02/11	0d 00h:20m:54s	Bias Alarm	6	Transmitter	Minor
7	15:16:15 11/02/11	0d 00h:20m:54s	Power Alarm	6	Transmitter	Minor
8	15:16:15 11/02/11	0d 00h:20m:54s	Current Feed Alarm	6	Transmitter	Minor
9	15:17:02 11/02/11	0d 00h:21m:41s	Major Alarm Cleared	1	Receiver	Normal
10	15:17:02 11/02/11	0d 00h:21m:41s	RLL Alarm Cleared	1	Receiver	Normal
11	15:17:04 11/02/11	0d 00h:21m:43s	Major Alarm Cleared	6	Transmitter	Normal
12	15:17:04 11/02/11	0d 00h:21m:43s	Minor Alarm Cleared	6	Transmitter	Normal
13	15:17:04 11/02/11	0d 00h:21m:43s	Bias Alarm Cleared	6	Transmitter	Normal
14	15:17:04 11/02/11	0d 00h:21m:43s	Power Alarm Cleared	6	Transmitter	Normal
15	15:17:04 11/02/11	0d 00h:21m:43s	Current Feed Alarm Cleared	6	Transmitter	Normal
16	15:18:16 11/02/11	0d 00h:22m:54s	Major Alarm	1	Receiver	Major
17	15:18:16 11/02/11	0d 00h:22m:54s	RLL Alarm	1	Receiver	Major

6.5.3.8 Left side bar – System report, generating a Event report

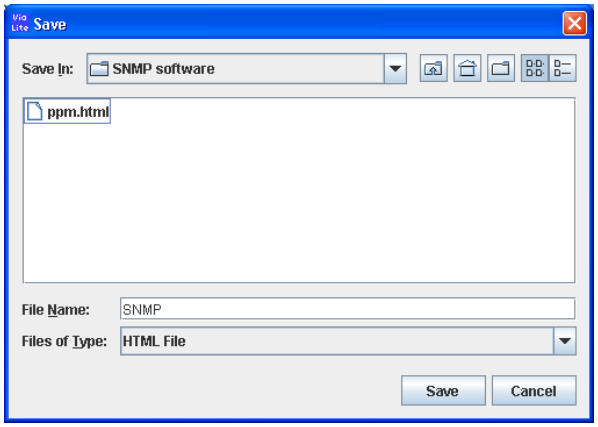
To generate the event report



1. Left click the SYSTEM REPORT icon on the left hand bar

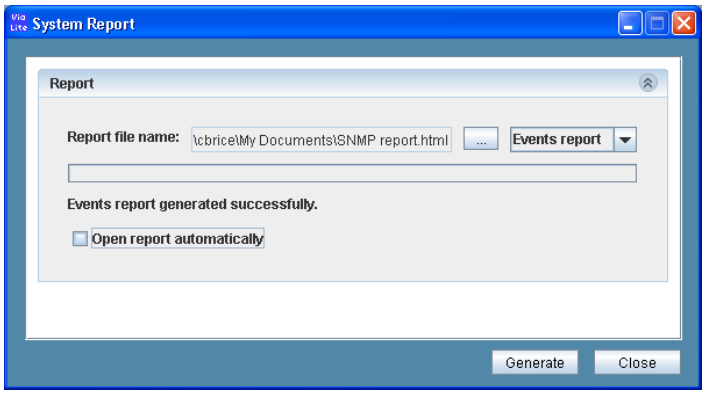


2. Click the "…" button on the right of the report file name box



3. Navigate to the directory in which you wish to save the report
4. Type a file name into the "file name" box
5. File type cannot be changed it will always generate an HTML file
6. Then click save

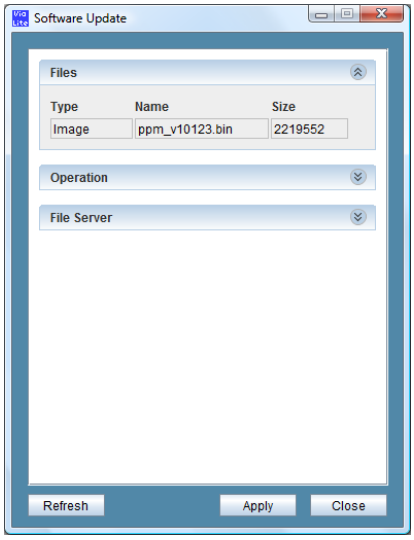
7. Check that EVENT REPORT is selected in the pull down menu, if not select it.



8. If you wish your web browser to automatically open the report after it is generated CHECK the “open report automatically”
9. Now click the generate button

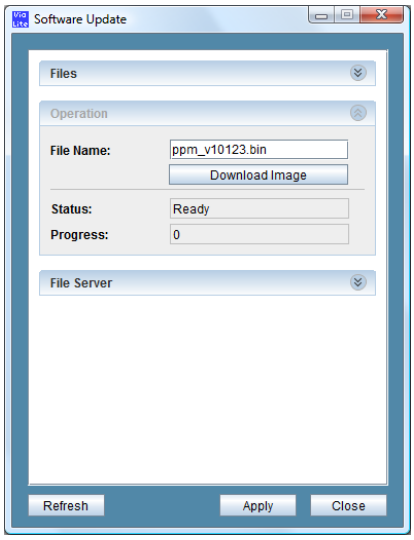
6.5.4 Left side bar – Software update

This allows you to update the SNMP and web controller software via FTP.



Software – Files box

Type – This shows the type of file last uploaded
Name – This is the file name last uploaded
Size – This is the size of the file last uploaded in bytes



Operation box – Files box

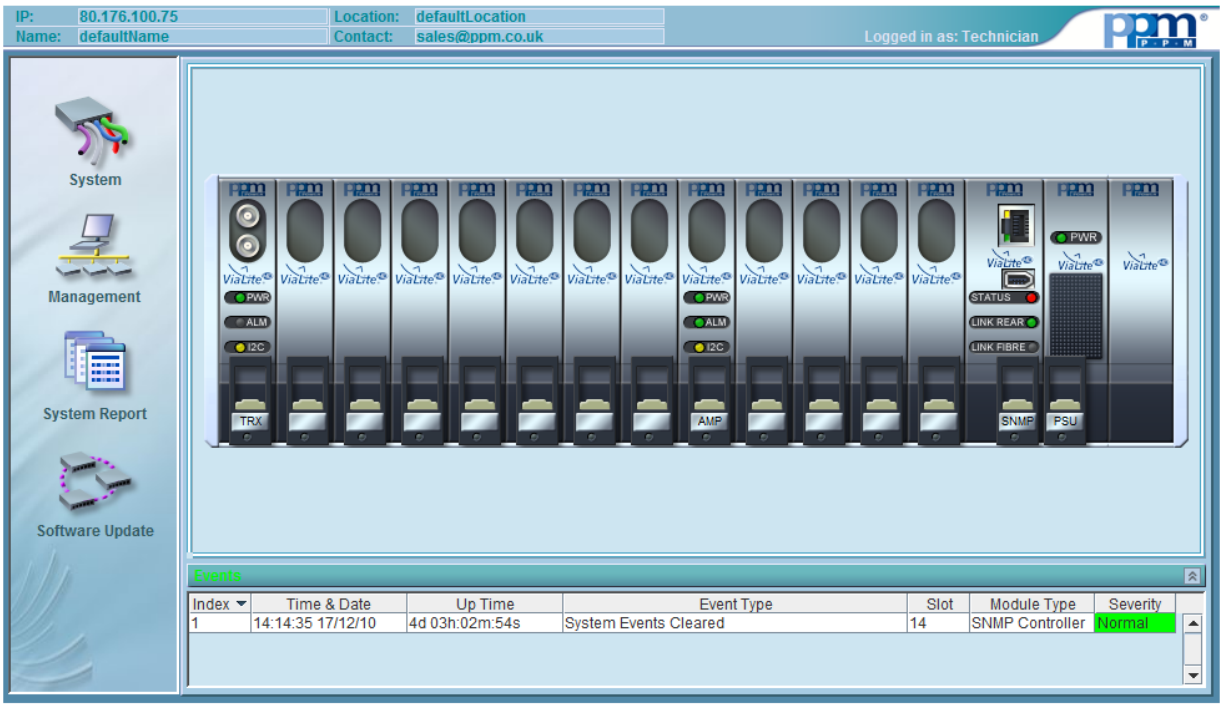
File name – This is a USER text field in which the name of the file to be uploaded is stored
Download image button – One ALL the download data fields have been correctly entered this is used to START the download
Status – This shows the status of the download
Progress – This shows the progress of the download

Operation box – Files server box

FTP IP address – This is a USER field in which the name of the FTP serve is entered
User name – This is the user name to access your FTP server
Password – This is the password associated user name to access your FTP server

6.5.4.1 Left side bar – Software update – how to load a new update

To upload a new software object:

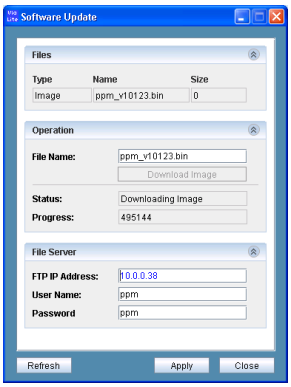


1. Left click the SOFTWARE UPDATE icon on the left hand bar
2. Click the arrow on the right of OPERATION to maximise this box
3. Click the arrow on the right of FILE SERVER to maximise this box

4. Ensure that your FTP server details are correct
    a. FILE SERVER box – IP ADDRESS
    b. FILE SERVER box – USER NAME
    c. FILE SERVER box – PASSWORD

    Note: You can use software such as FileZilla Server to support this function on a PC
5. Enter the file name of the object that to load into the Operations FILE NAME box, It will be in a format similar to the example.
6. Press the APPLY button at the bottom of the window to apply this file name
7. Recheck all the details. It is possible to corrupt the board if an incorrect image is loaded. This may require a factory reset
8. Press the DOWNLOAD IMAGE button.

9. You will be asked to confirm the action, click YES if you are sure

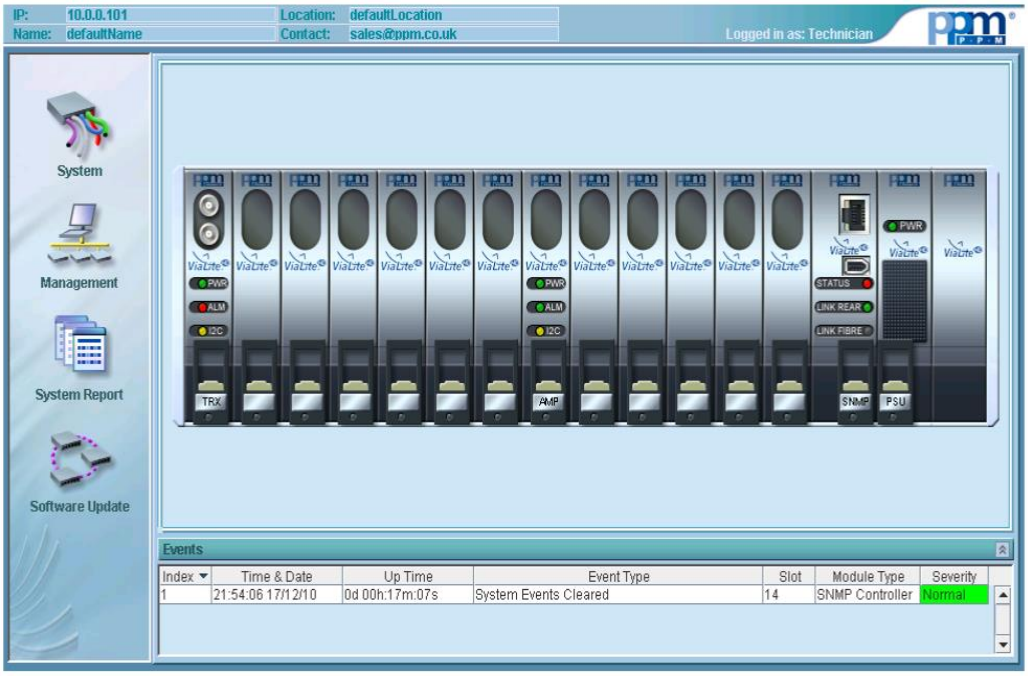


10. You will see the upload start, progress and complete.
11. Typically it will take about 2 minutes but is very dependent on your network
12. When the status windows says READY the new software is loaded
13. To restart the GUI you MUST close the close ALL the web browser windows in which it is running
14. Open a new web browser window
15. You may confirm the version by clicking the left hand menu SYSTEM icon and opening the INVENTORY box.

6.6 Bottom event window

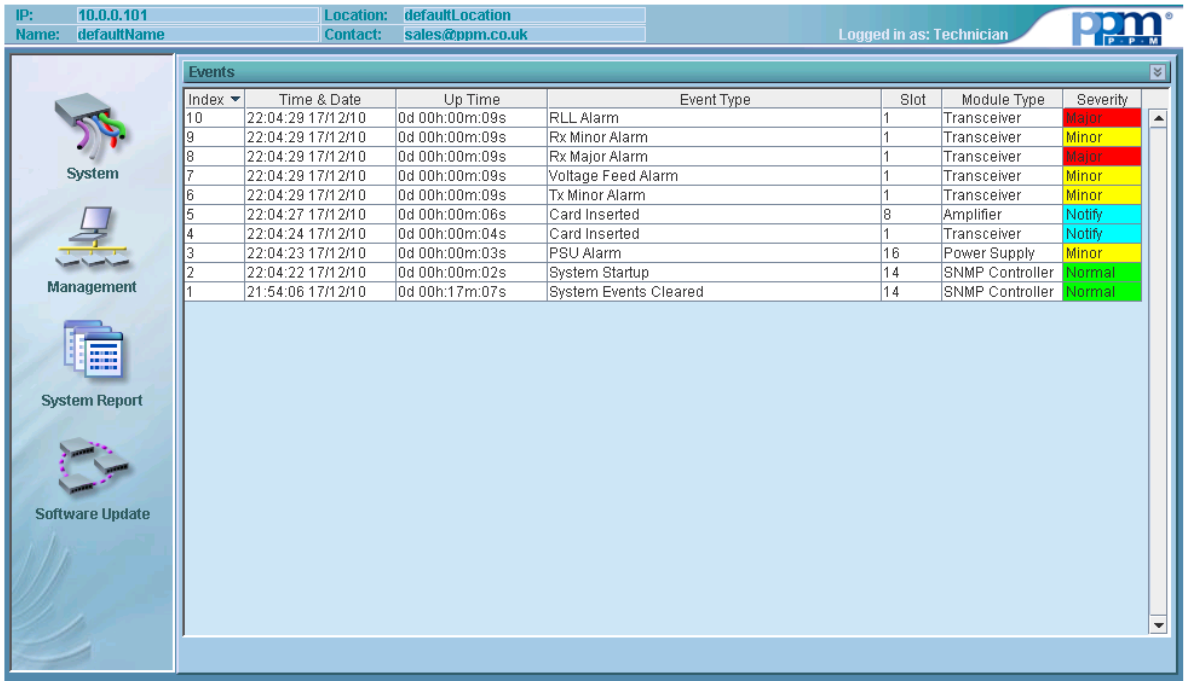
The ***ViaLiteHD*** SNMP and web controller has a window which displays system events. It provides a history of the last 128 events is stored in non volatile memory on the SNMP and web controller. Each event is has an index number, this number is increment with each new event.

The GUI is able to provide a visual indication of new events. When a new event occurs, the “event” text at the top of the event box will flash green and black. If you click this to acknowledge the event the text will stop flashing until there is a new event.


IP: 10.0.0.101
Location: defaultLocation
Name: defaultName
Contact: sales@ppm.co.uk
Logged in as: Technician
System
Management
System Report
Software Update
Events
Index | Time & Date | Up Time | Event Type | Slot | Module Type | Severity
1 | 21:54:06 17/12/10 | 0d 00h:17m:07s | System Events Cleared | 14 | SNMP Controller | Normal

The last 128 event are stored, each event generates an event index number starting at 1. The index number will increase each time there is a new event, it is not numerically limited. The index number is only reset (to 1) when the event log is cleared. Only the last 128 events are stored, earlier event are erased.

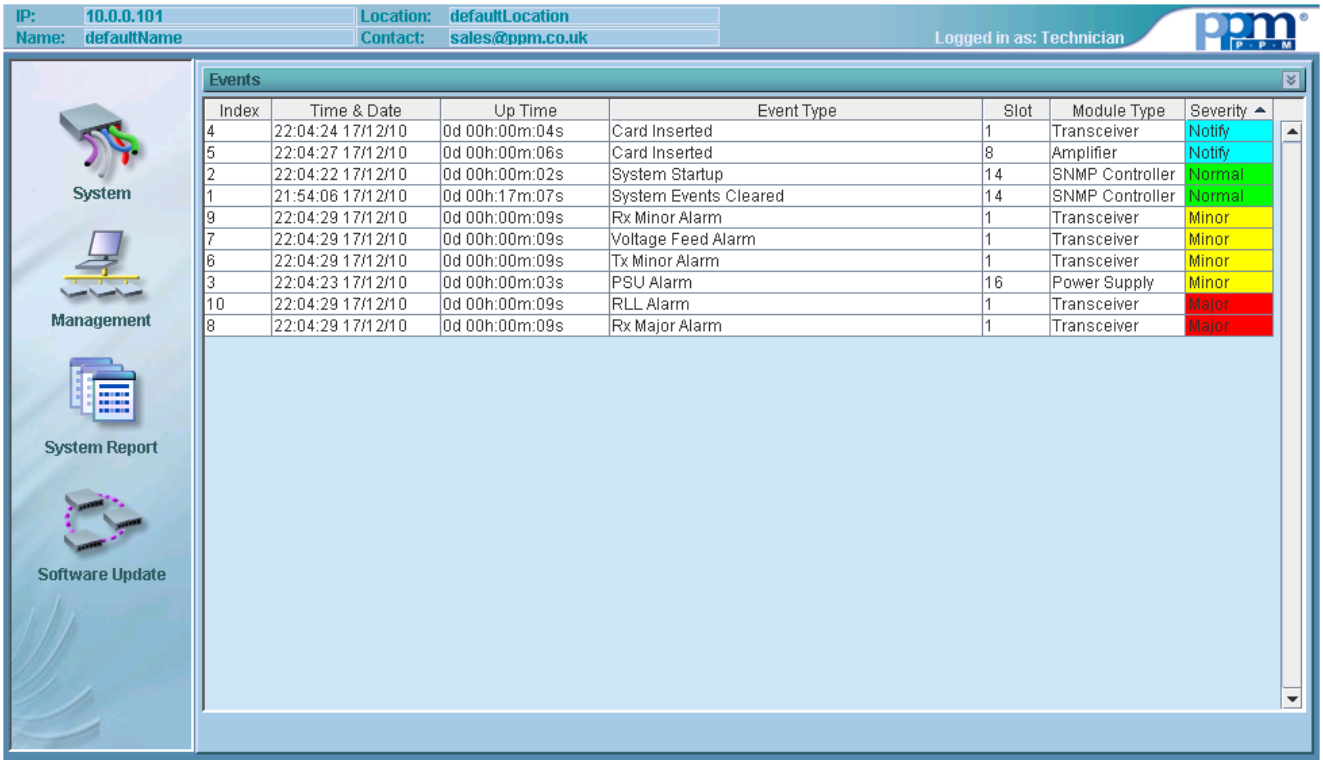
The event window can be maximised by clicking the arrows in the top right hand corner of the window. It can be minimised in the same fashion


IP: 10.0.0.101
Location: defaultLocation
Name: defaultName
Contact: sales@ppm.co.uk
Logged in as: Technician
System
Management
System Report
Software Update
Events
Index | Time & Date | Up Time | Event Type | Slot | Module Type | Severity
10 | 22:04:29 17/12/10 | 0d 00h:00m:09s | RLL Alarm | 1 | Transceiver | Major
9 | 22:04:29 17/12/10 | 0d 00h:00m:09s | Rx Minor Alarm | 1 | Transceiver | Minor
8 | 22:04:29 17/12/10 | 0d 00h:00m:09s | Rx Major Alarm | 1 | Transceiver | Major
7 | 22:04:29 17/12/10 | 0d 00h:00m:09s | Voltage Feed Alarm | 1 | Transceiver | Minor
6 | 22:04:29 17/12/10 | 0d 00h:00m:09s | Tx Minor Alarm | 1 | Transceiver | Minor
5 | 22:04:27 17/12/10 | 0d 00h:00m:06s | Card Inserted | 8 | Amplifier | Notify
4 | 22:04:24 17/12/10 | 0d 00h:00m:04s | Card Inserted | 1 | Transceiver | Notify
3 | 22:04:23 17/12/10 | 0d 00h:00m:03s | PSU Alarm | 16 | Power Supply | Minor
2 | 22:04:22 17/12/10 | 0d 00h:00m:02s | System Startup | 14 | SNMP Controller | Normal
1 | 21:54:06 17/12/10 | 0d 00h:17m:07s | System Events Cleared | 14 | SNMP Controller | Normal

6.6.1 Bottom event window, sorting events

The events can be sorted by any of the event table columns, in both forward and reverse order

- Index
- Time and date
- Uptime
- Event type
- Slot
- Module type
- Severity


IP: 10.0.0.101
Location: defaultLocation
Name: defaultName
Contact: sales@ppm.co.uk
Logged in as: Technician
System
Management
System Report
Software Update
Events
Index | Time & Date | Up Time | Event Type | Slot | Module Type | Severity
4 | 22:04:24 17/12/10 | 0d 00h:00m:04s | Card Inserted | 1 | Transceiver | Notify
5 | 22:04:27 17/12/10 | 0d 00h:00m:06s | Card Inserted | 8 | Amplifier | Notify
2 | 22:04:22 17/12/10 | 0d 00h:00m:02s | System Startup | 14 | SNMP Controller | Normal
1 | 21:54:06 17/12/10 | 0d 00h:17m:07s | System Events Cleared | 14 | SNMP Controller | Normal
9 | 22:04:29 17/12/10 | 0d 00h:00m:09s | Rx Minor Alarm | 1 | Transceiver | Minor
7 | 22:04:29 17/12/10 | 0d 00h:00m:09s | Voltage Feed Alarm | 1 | Transceiver | Minor
6 | 22:04:29 17/12/10 | 0d 00h:00m:09s | Tx Minor Alarm | 1 | Transceiver | Minor
3 | 22:04:23 17/12/10 | 0d 00h:00m:03s | PSU Alarm | 16 | Power Supply | Minor
10 | 22:04:29 17/12/10 | 0d 00h:00m:09s | RLL Alarm | 1 | Transceiver | Major
8 | 22:04:29 17/12/10 | 0d 00h:00m:09s | Rx Major Alarm | 1 | Transceiver | Major

The default sort order is by index number
To change the sort order

- Clicking the column heading you wish to use
- Click it again to toggle between ascending and descending sorting.
- An up/down arrow is displayed on the heading by which the table is sorted, it indicates the sort direction

6.6.2 Bottom event window, event severity

There are a number of levels of event severity these are all colour coded in the event window

- Major alarm are coded RED
- Minor alarm are coded YELLOW
- Normal events are coded GREEN
- Notify events are coded TURQUOISE

The alarm are classified as follows

Major alarm – These are typically events that may cause major disruption to operation, depend on deployment these may or may not be critically service effecting. Typical events to trigger this would be low light level at optical receivers (RLL Alarm), card removal or similar. Any major alarm will change the SNMP and web controller LED from green to red.

Minor alarms – These are typically event that may degrade performance or warn of impending major alarms, they may effect the quality of service. Typical events would be system temperature alarm, RX AGC alarm, Voltage feed alarm or similar

Normal event– These are events that would be expected to happen under normal operation. Typical type of events would be system start up and alarms being cleared.

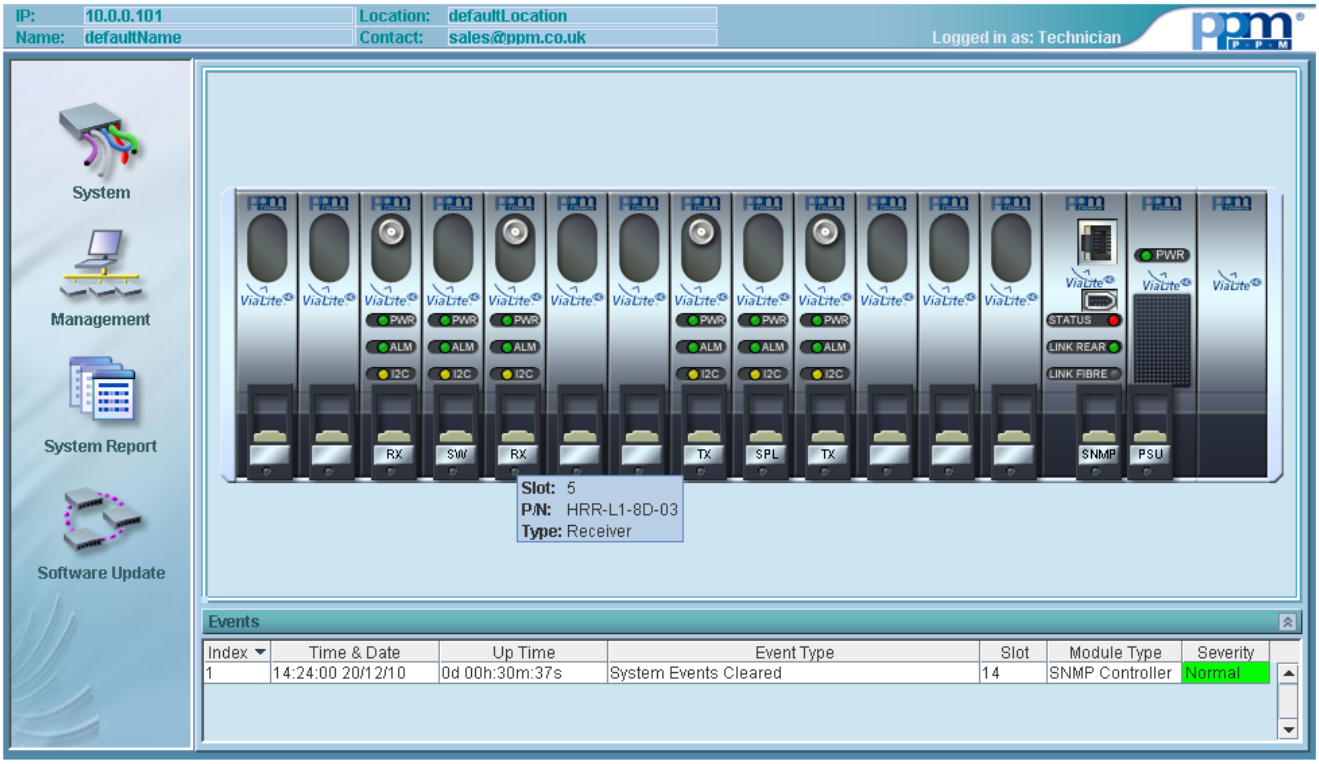
Notify event – These are the type of events that are useful to record as the represent a change in status. A typical type of event would be card insertion.

Following is a list of all the events types and their severity. The severity of the events is dependent on there event type and preset in the software.

Alarm description	Severity
AGC Alarm	MINOR
AGC Alarm Cleared	NORMAL
Bias Alarm	MINOR
Bias Alarm Cleared	NORMAL
Card Inserted	NOTIFY
Card Removed	MAJOR
Current Feed Alarm	MINOR
Current Feed Alarm Cleared	NORMAL
Laser Alarm	MAJOR
Laser Alarm Cleared	NORMAL
Major Alarm	MAJOR
Major Alarm Cleared	NORMAL
Minor Alarm	MINOR
Minor Alarm Cleared	NORMAL
Overload Alarm Clear	NORMAL
Overload Alarm	MINOR
Power Alarm	MINOR
Power Alarm Cleared	NORMAL
PSU Alarm	MINOR
PSU Normal	NORMAL
RF Gain Alarm	MINOR
RF Gain Alarm Cleared	NORMAL
RF Level Alarm	MINOR
RF Level Alarm Cleared	NORMAL
RLL Alarm	MAJOR
RLL Alarm Cleared	NORMAL
System Events Cleared	NORMAL
System Start-up	NORMAL
System Temperature Alarm	MINOR
System Temperature Alarm Cleared	NORMAL
System Voltage Alarm	MINOR
System Voltage Alarm Cleared	NORMAL
Temperature Alarm	MINOR
Temperature Alarm Cleared	NORMAL
Temperature Clear	NORMAL
Temperature Overload	MINOR
VCC Alarm	MINOR
VCC Alarm Cleared	NORMAL
Voltage Feed Alarm	MINOR
Voltage Feed Alarm Cleared	NORMAL

6.7 Central rack chassis graphical interface window

The central window give a graphical representation of both the modules fitted in the chassis and there status



This window has the following features

- Each modules should be represented in the correct slot
- Each module should have a graphically correct front panel
- Each of the modules LEDs should reflect the status of the actual module
- Each module in slots 1-13 can be hovered over this will display its slot number, part number and type
- Each module in slots 1-16 is click able, with a single left click, this will bring up
    - SLOT window for modules in slots 1-13
    - A SYSTEMS VIEW window in slot 14, with the PROPERTIES box maximised
    - A SYSTEMS VIEW window in slots 15 and 16, with the ENVIRONMENT window maximised

Note: The text on some modules maybe modified to improve readability
Full detail of the operation of the modules and how they can be software controlled is given in the section 7 and its subsections.

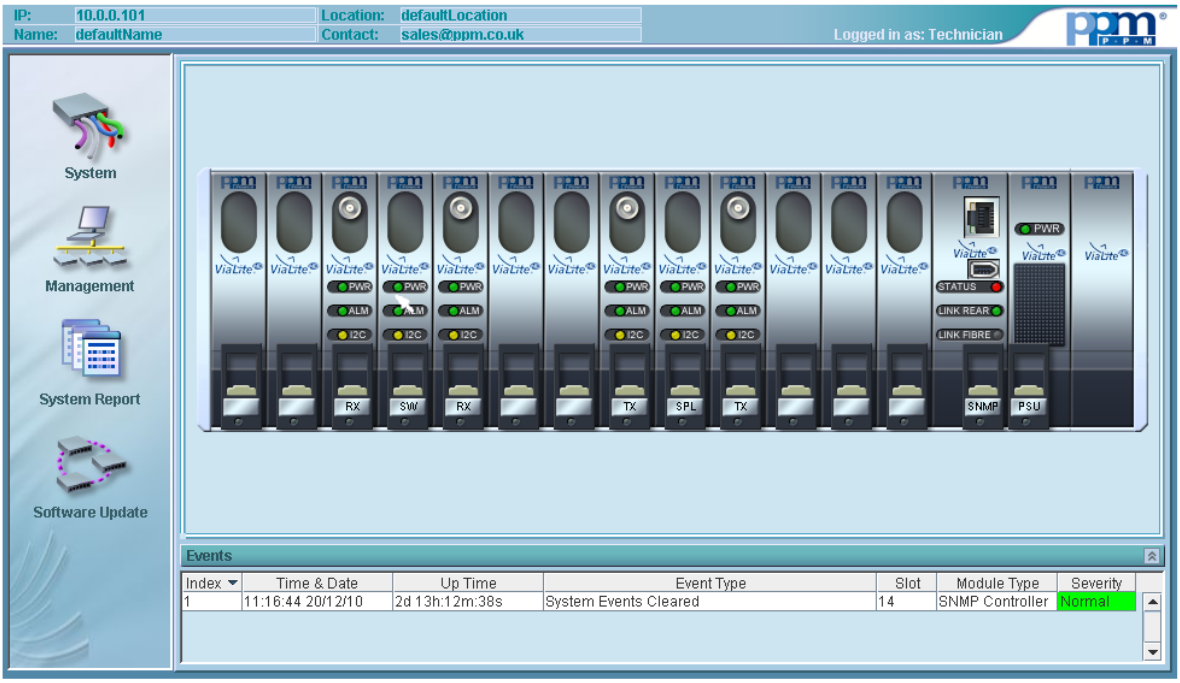
7 Slot windows

7.1 Slot windows general information

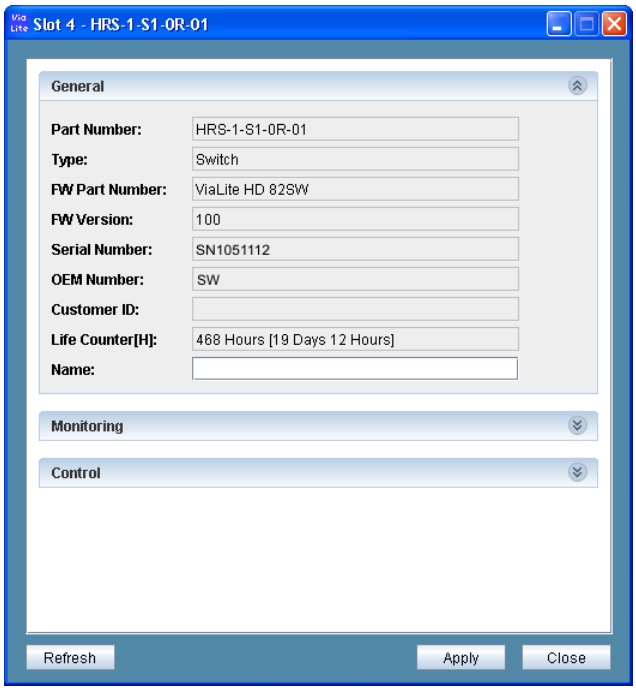
This information is always available in every slots with a module fitted. The only exception is in a slot fitted with a redundancy load module; the redundancy load module has no processor and will show as blank. All modules have a NAME field that maybe used to store USER defined text information of up to 32 characters. More details are given in section 2.14

7.1.1 Slot windows general information, opening the slot window

To open any slot window:

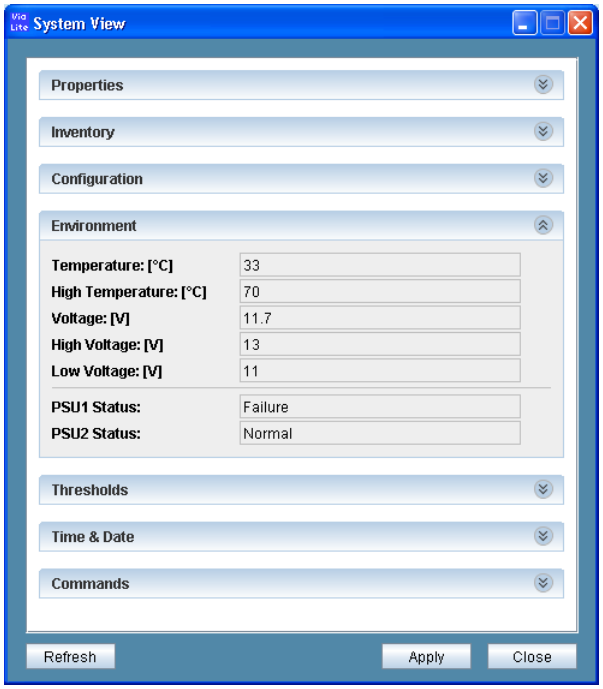


1. Left click slot GUI image, this will open the slot window
    a. Note if you hover over the window you will display the slot number, part number and type
2. The type of window that opens depends on the slot number



    a. For Slots 1-13 a slot window will be opened

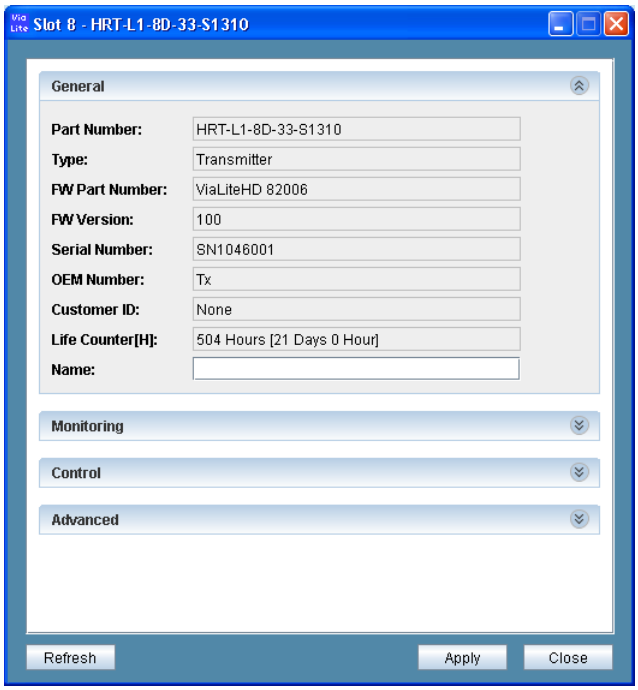
b. For Slot 14 a SYSTEMS VIEW window will open with the PROPERTIES box maximised



c. For slots 15 and 16 a SYSTEMS VIEW window will open with the ENVIRONMENT window maximised

7.2 Slot windows for TX type

The TX type module will open with the GENERAL box maximised



7.2.1 Slot window for TX type, monitoring

Slot window – TX type, monitoring

Supply voltage – This is the supply voltage measured at the input to the module, measured in volts
Laser power – This is the average optical power output of the laser, measured in decibel milli watts
RF gain – This is the electro optic gain of the module measured in decibels
Ext. voltage – This is the bias voltage measured at the RF input to the transmitter, measured in volts

Laser bias – This is the bias current of the laser diode, measured in milli amps
RF power – This is the RF power measured at the input to the laser diode, measured in decibel milli watts
Ext. current – This is the average DC current flowing out of the RF input, measured in milli amps

Laser – This is the laser power control loop status, it can be ENABLED (on) or DISABLED (off)
MGC status – This is the manual gain control status, it can ON or OFF
SGC status – This is the software gain control status, it can ON or OFF

FSK status –This is the frequency shift key digital communications channel status, it can be ENABLED (on) or DISABLED (off).
AGC status – This is the automatic gain control status, it can be ENABLED (on) or DISABLED (off).
GPS status - This shows the status of the GPS mode, it can be ON or OFF.

Major alarm –This is the major alarm status, it can be ON (alarm active) or OFF (good).
Laser alarm –This is the laser control loop alarm status, it can be ON or OFF.
Vcc alarm –This is the (input) voltage alarm status, it can be ON or OFF.
Power alarm –This is the laser output power alarm status, it can be ON or OFF.
Voltage alarm –This is the external feed voltage alarm status, it can be ON or OFF.
Level alarm –This is the RF power level alarm status, it can be ON or OFF.

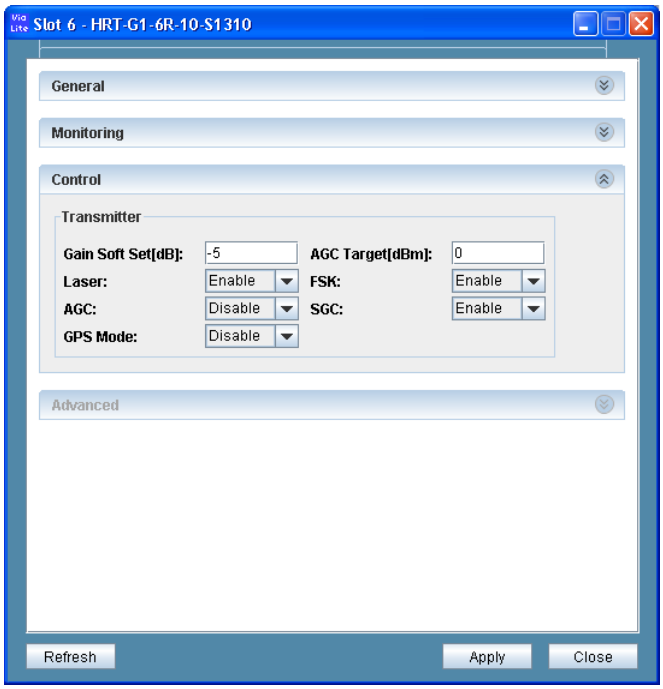
Minor alarm –This is the minor alarm status, it can be ON or OFF.
AGC alarm –This is the automatic gain control alarm status, it can be ON or OFF.
Bias alarm – This is the laser bias current alarm status, it can be ON or OFF.
Current alarm - This is the external feed current alarm status, it can be ON or OFF.
Temp alarm – This is the temperature alarm status, it can be ON or OFF.
Gain alarm – This is the RF gain alarm status, it can be ON or OFF.

7.2.1.1 Slot window for TX type, monitoring, note on TX AGC

When set to operate in AGC mode the TX module can only operate in RF control mode.

When operating in RF mode, the TX module will use a slow control loop to set the power at the monitor to the AGC TARGET level. The gain is continuously adjusted and is controlled in 0.5dB steps

7.2.2 Slot window for TX type, control



Slot window – TX type, control
Gain soft set – This sets the value of the set electro optic gain, measured in decibels
Laser – This sets the laser status, it can be ENABLED (on) or DISABLED (off).
AGC – This sets the automatic gain control status, it can be ENABLED (on) or DISABLED (off).
GPS mode - This sets the GPS emulation status, it can be ENABLED (on) or DISABLED (off).

AGC target – This sets the target value for the AGC control loop module, measured in decibel milli watts.
FSK – This sets the status of the frequency shift key digital communications channel, it can be ENABLED (on) or DISABLED (off).
SGC – This sets the software gain control status, it can be ENABLED (on) or DISABLED (off).

7.2.2.1 Slot window for TX type, control, gain control priorities

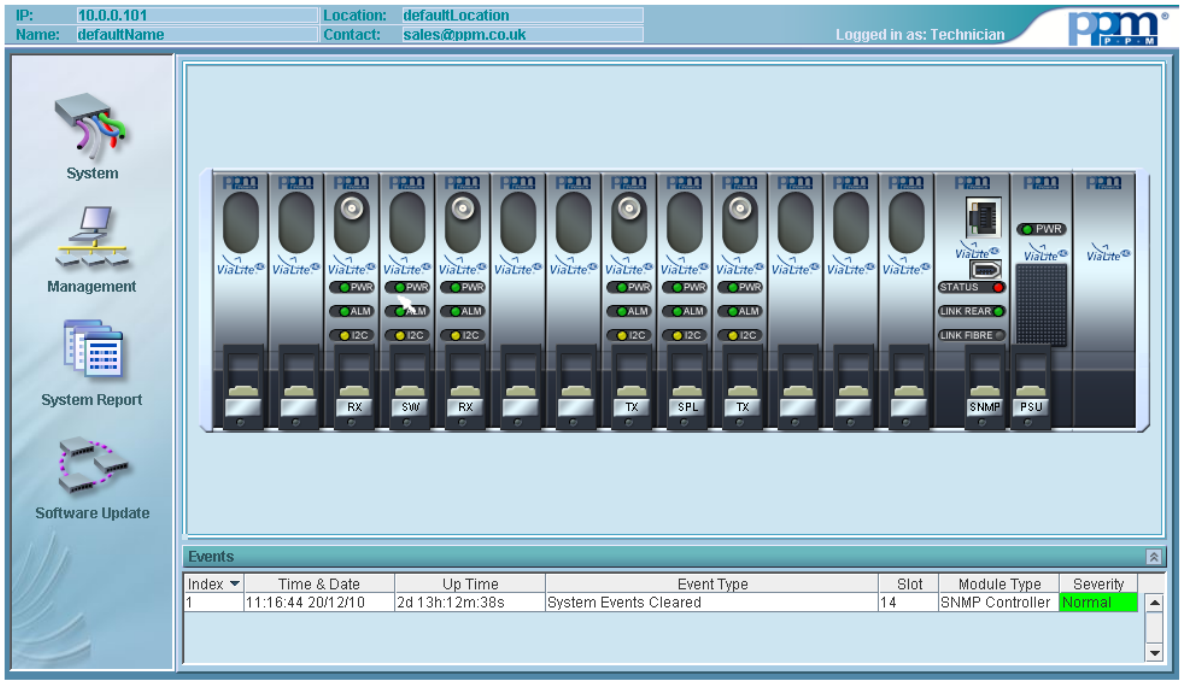
There are a number of methods by which the gain maybe controlled depending on module type. It is possible to make a number of them active simultaneously. In this case the module firmware will discriminate by order of priority.

Highest Priority	MGC, manual gain control set using module hardware switches, available on rack modules
	SGC, soft gain control, set via controller
	AGC, Automatic gain control, set via controller
Lowest Priority	Default gain, Factory pre-set gain

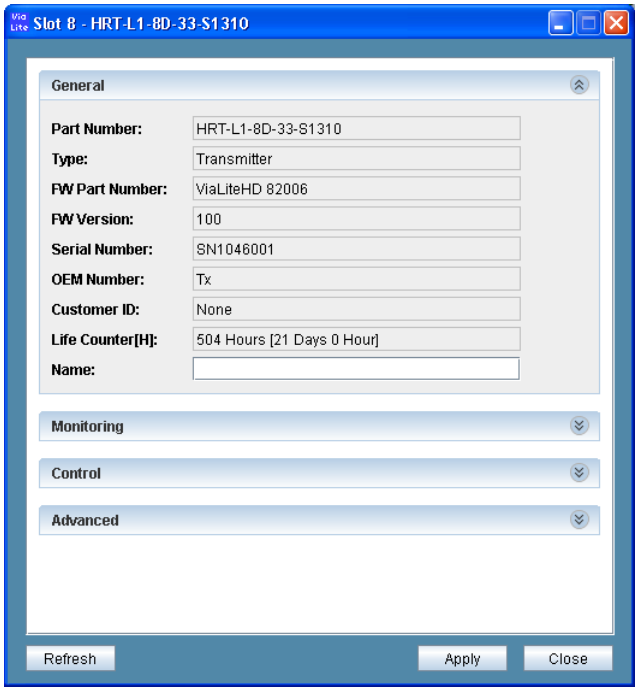
The gain set by MGC is not reported through the control interface

7.2.2.2 Slot window for TX type, control, enabling and disabling the laser

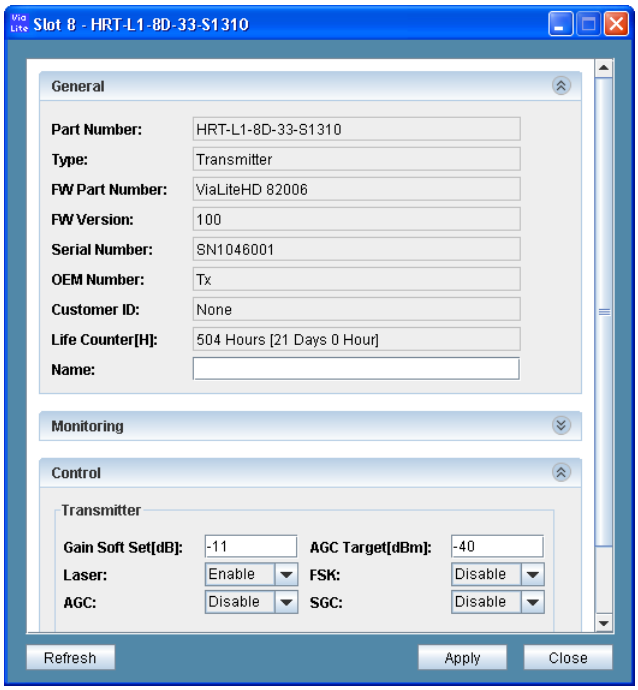
To change the laser status:



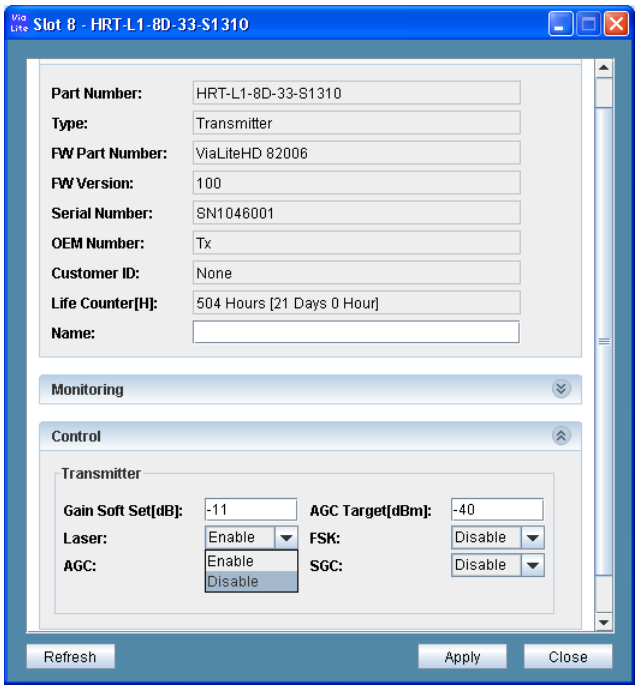
1. Left click slot GUI image, this will open the slot window



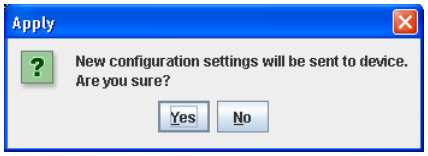
2. Maximise the CONTROL box



3. Using the pull down menu change the status of the laser



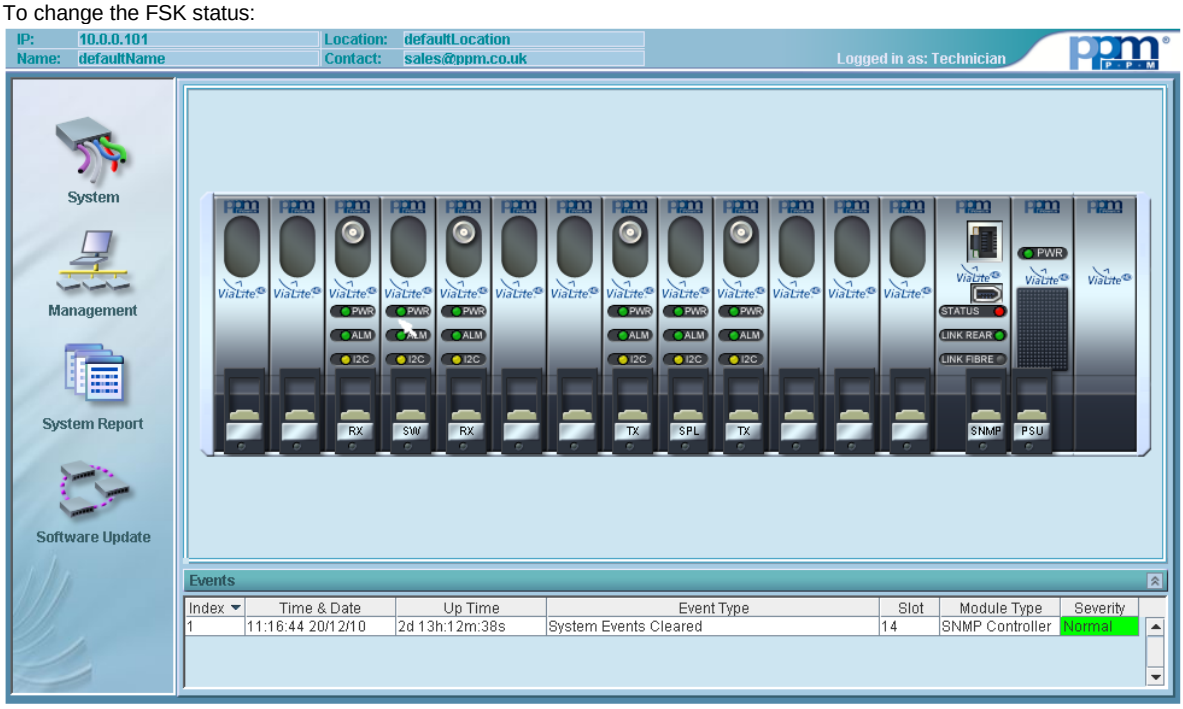
4. The desired status will now be shown in the box
5. Click the APPLY button



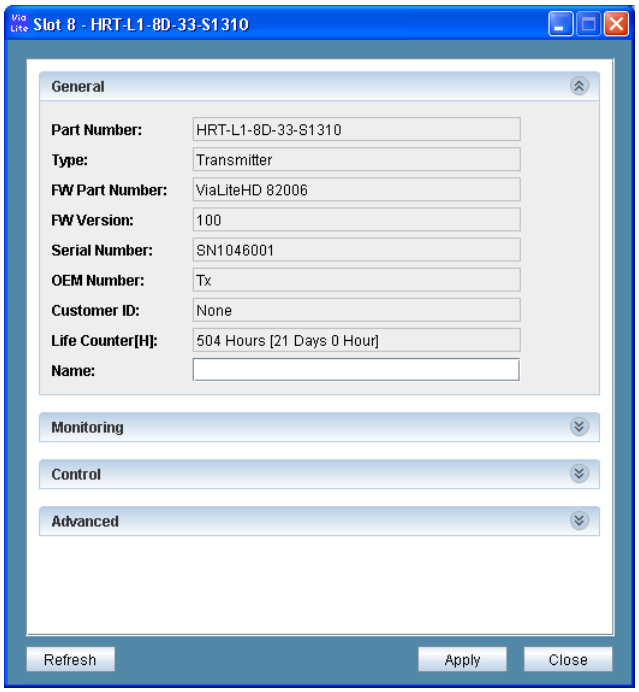
6. You will be asked to confirm the action, click YES if you are sure
7. The change will take effect on the next polling cycle of the slot
8. You can confirm that the change is in effect by opening the MONITORING box

7.2.2.3 Slot window for TX type, control, turning ON and OFF FSK

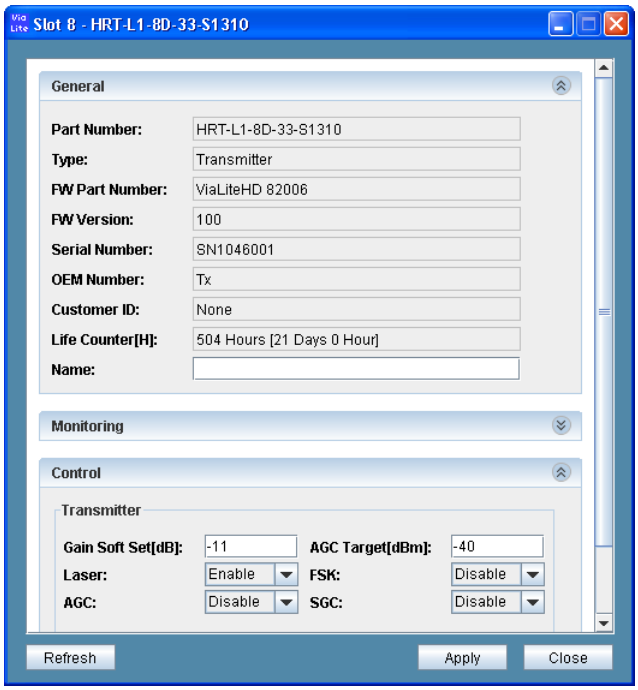
To change the FSK status:



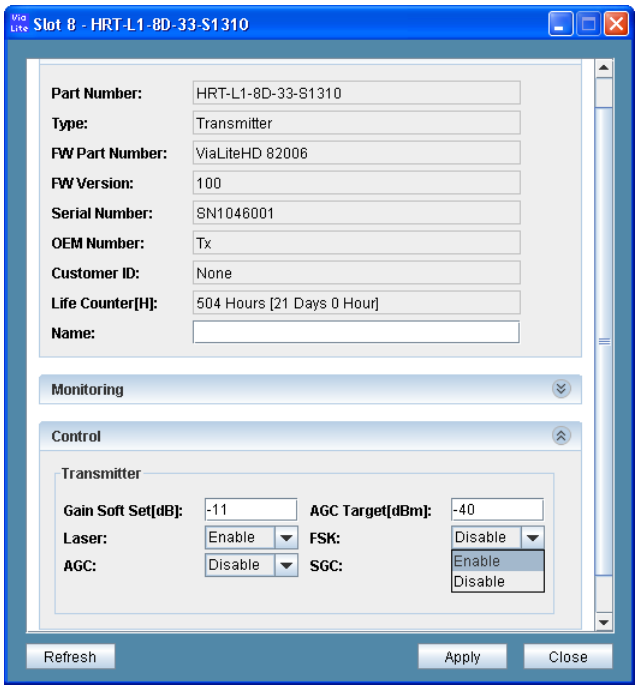
1. Left click slot GUI image, this will open the slot window



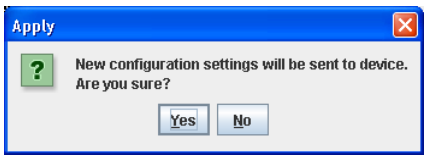
2. Maximise the CONTROL box



3. Using the pull down menu change the status of the FSK



4. The desired status will now be shown in the box
5. Click the APPLY button

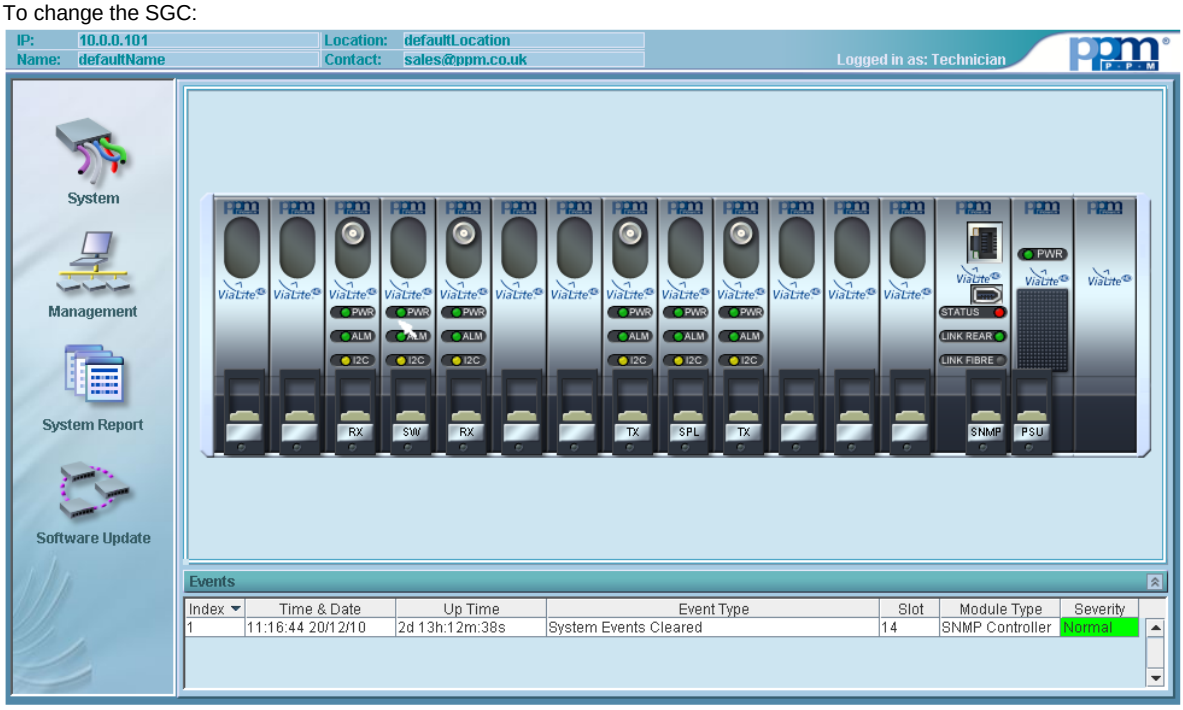


6. You will be asked to confirm the action, click YES if you are sure
7. The change will take effect on the next polling cycle of the slot
8. You can confirm that the change is in effect by opening the MONITORING box

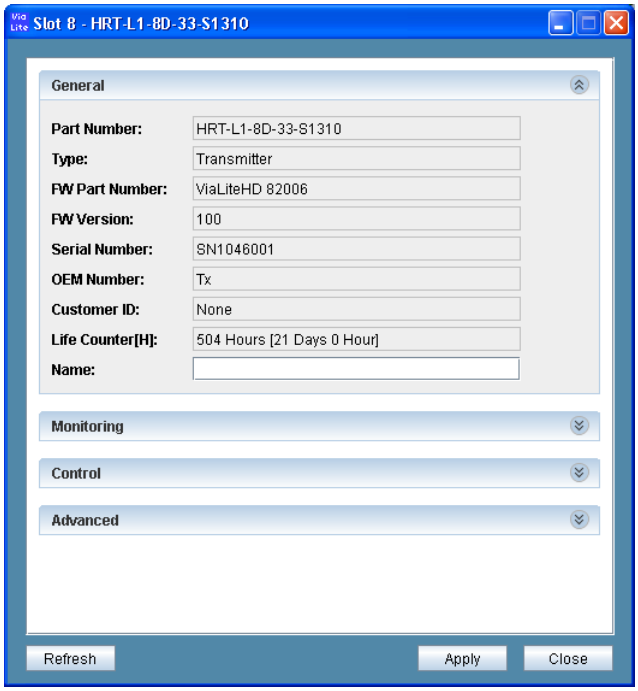
7.2.2.4 Slot window for TX type, control, turning on SGC and setting the soft gain

Note that the SGC settings will ONLY be effective when BOTH the MGC switches are all set in the OFF position (factory default) AND the AGC status is DISABLED

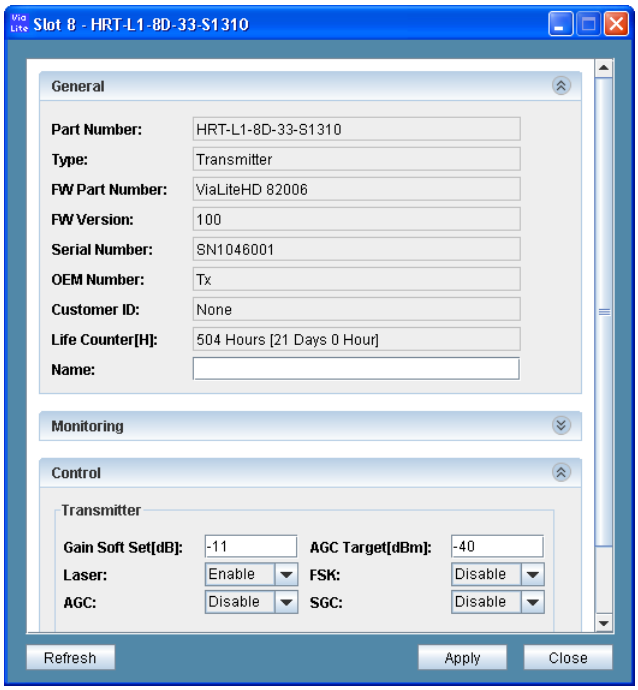
To change the SGC:



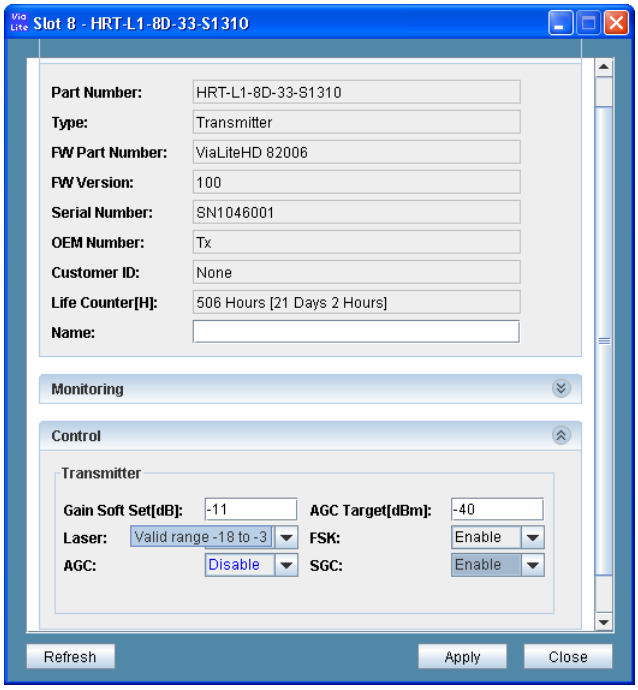
1. Left click slot GUI image, this will open the slot window



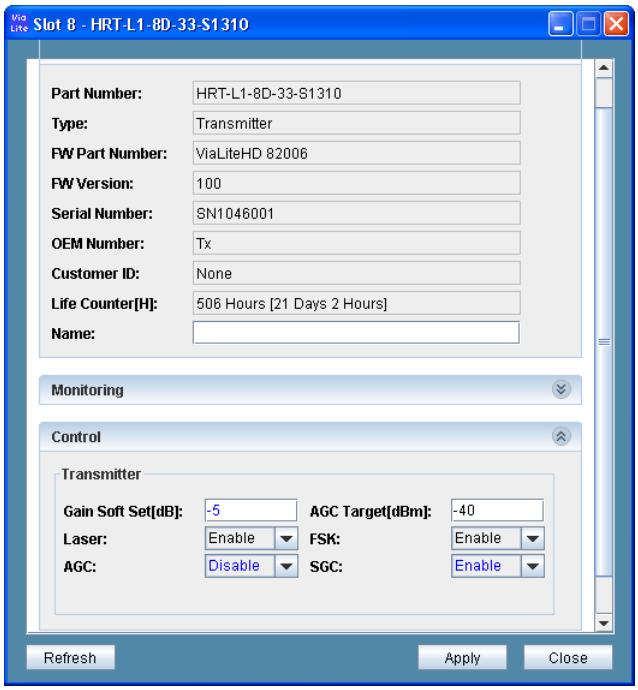
2. Maximise the CONTROL box



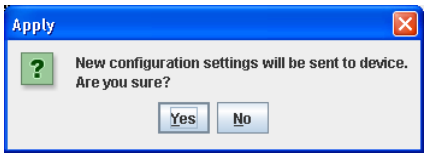
3. Check that the AGC status is DISABLED, if not set it to DISABLED using the pull down menu
4. Check that the SGC status is ENABLED, if not set it to ENABLED using the pull down menu



5. You may hover over the GAIN SOFT SET box to determine the valid SGC range
6. Enter the desired value into the GAIN SOFT SET box



7. The desired status will now be shown in the box
8. Click the APPLY button



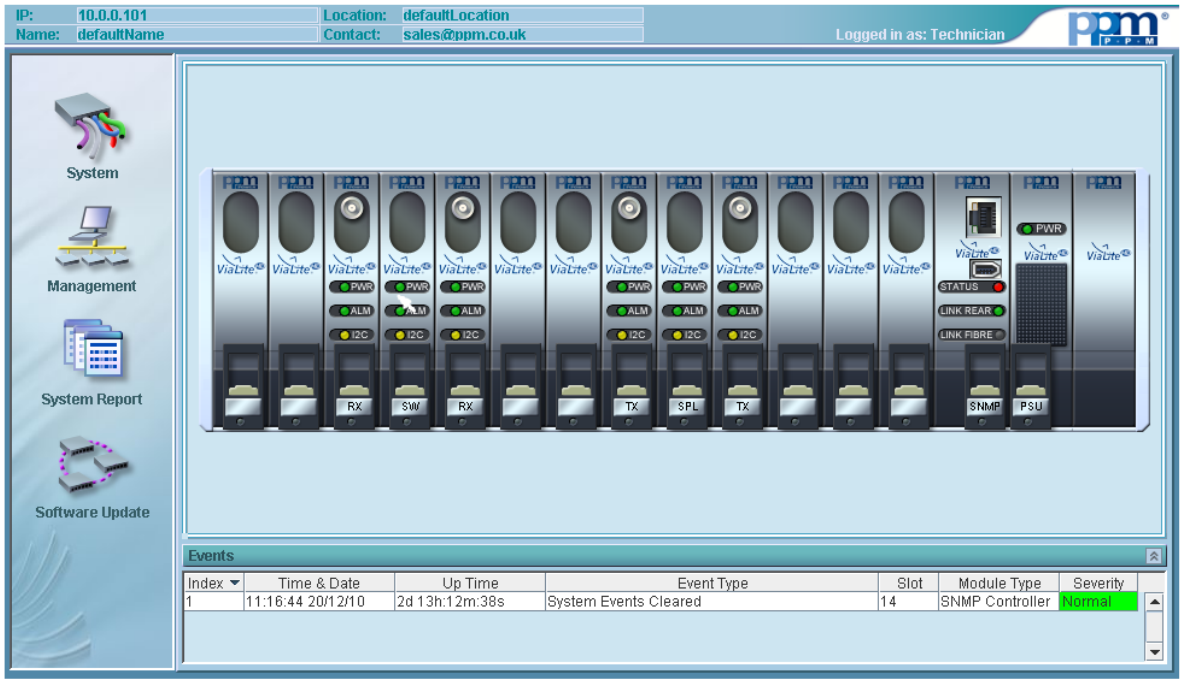
9. You will be asked to confirm the action, click YES if you are sure
10. The change will take effect on the next polling cycle of the slot
11. You can confirm that the change is in effect by opening the MONITORING box

Note: The gain setting is rounded to closest 0.5dB step

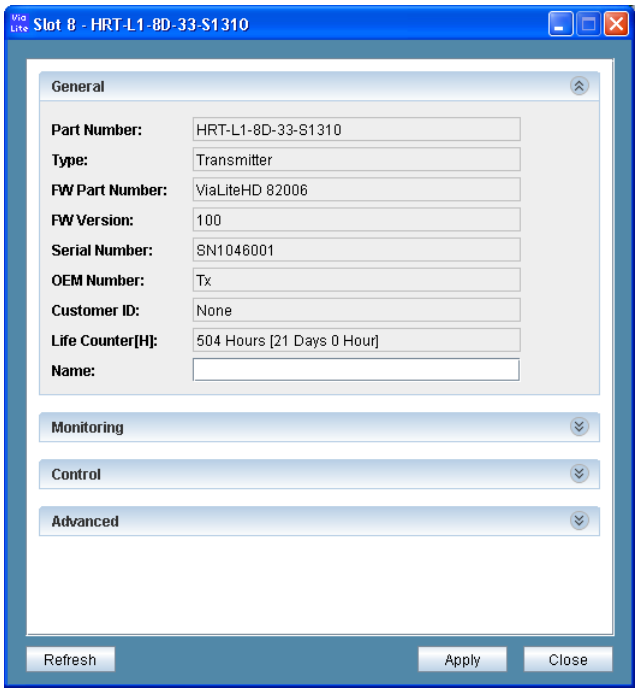
7.2.2.5 Slot window for TX type, control, turning on AGC and setting the AGC target

Note that the AGC settings will ONLY be effective when the MGC switches are all set in the OFF position (factory default).

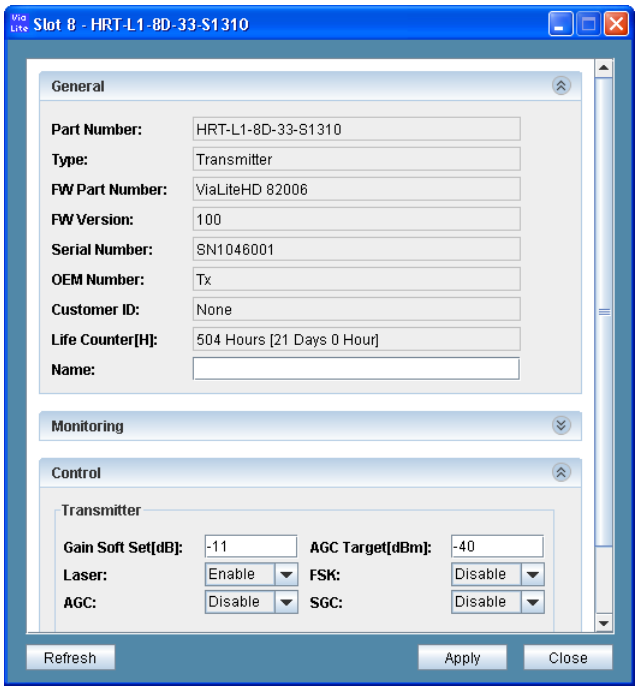
To change the AGC:



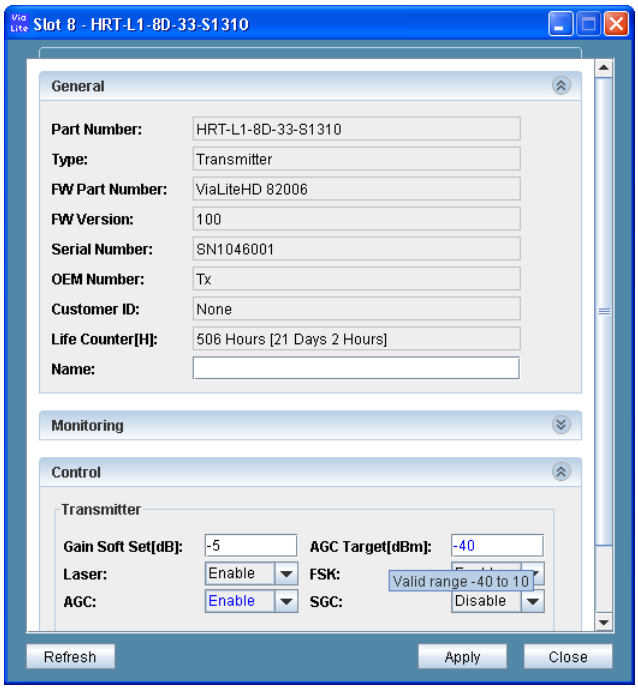
1. Left click slot GUI image, this will open the slot window



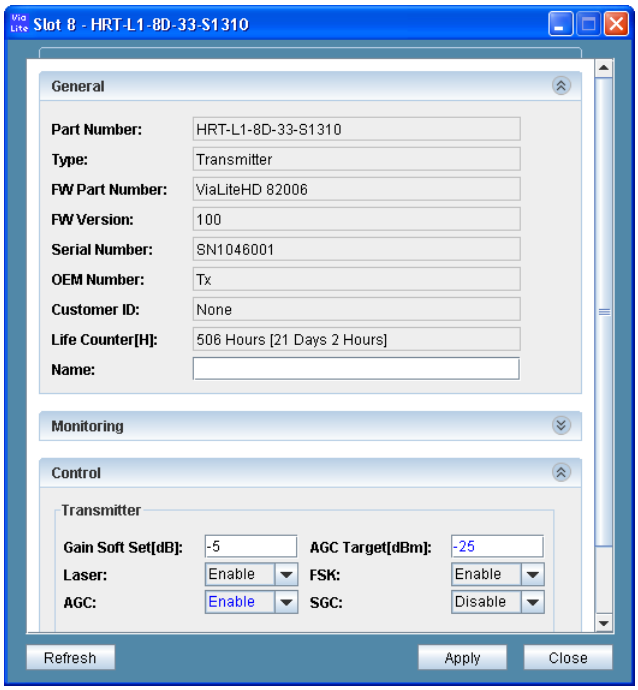
2. Maximise the CONTROL box



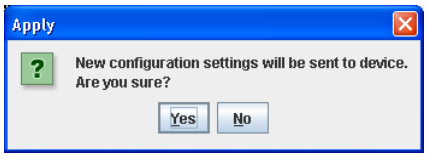
3. Check that the AGC status is ENABLED, if not set it to ENABLED using the pull down menu



4. You may hover over the AGC TARGET box to determine the valid AGC range
5. Enter the desired value into the AGC TARGET box



6. The desired status will now be shown in the box
7. Click the APPLY button



8. You will be asked to confirm the action, click YES if you are sure
9. The change will take effect on the next polling cycle of the slot
10. You can confirm that the change is in effect by opening the MONITORING box

Note: The gain setting is rounded to closest 0.5dB step

7.2.2.6 Slot window for TX type, control, calculating AGC target level

The variations in the input level can be compensated by using transmitter AGC control. This can be used for two main purposes, either to fix the average RF output power or to control intermodulation products so that, for example, desired ratio of carrier to intermodulation distortions can be achieved.

The RF power is the level measured at the internal power detector and is dependent on the input signal level and gain control.

The AGC TARGET LEVEL is level that the module aims to achieve by gain control ahead of the internal detector. It can be set to a desired level so that RF MON will be locked to it with an accuracy of approx. 0.5dB when the AGC loop works normally.

To find out the value for AGC TARGET LEVEL when INPUT POWER is known, you may use the equation below

AGC TARGET LEVEL = INPUT POWER + RF GAIN – (RF GAIN CAL –RF MON CAL)

where RF GAIN is the real time monitor of TX GAIN and RF GAIN CAL and RF MON CAL are the module factory calibration constants stored in the TX Type ADVANCED parameters box.

If the gain of the complementary receiver is known you may also relate the AGC TARGET LEVEL to the receiver OUTPUT POWER.

AGC TARGET LEVEL = OUTPUT POWER – RF GAIN (RX) – (RF GAIN CAL –RF MON CAL) + 2 x Optical Loss

OR

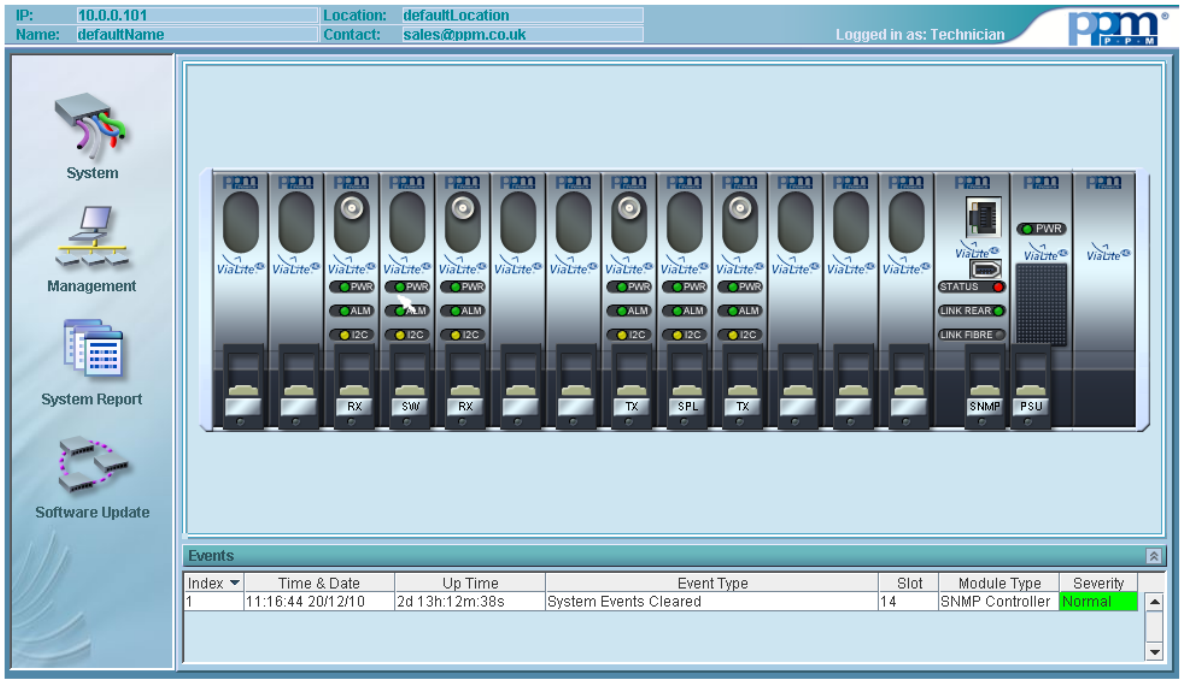
OUTPUT POWER = AGC TARGET LEVEL + RF GAIN (RX) + (RF GAIN CAL –RF MON CAL) - 2 x Optical Loss

7.2.2.7 Slot window for TX type, control, enabling and disabling GPS mode

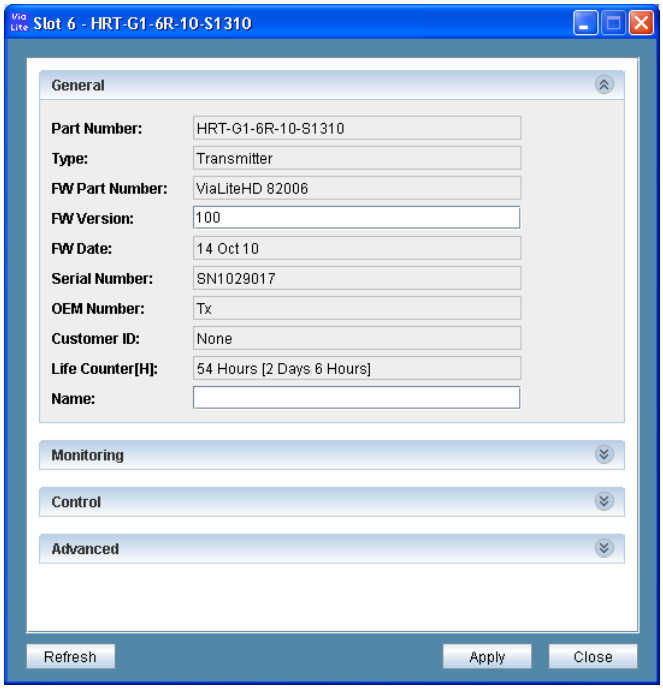
Under normal non-fault condition a GPS TX FOL will operate in an identical fashion to all other ViaLiteHD modules. However the transmitter is equipped with additional hardware, this detects the DC current flowing from GPS transmitter RF input to the active GPS antenna.

With GPS mode enabled, the transmitter laser will turn off, if the antenna current falls to near zero. Full details are given in your RF modules handbook.

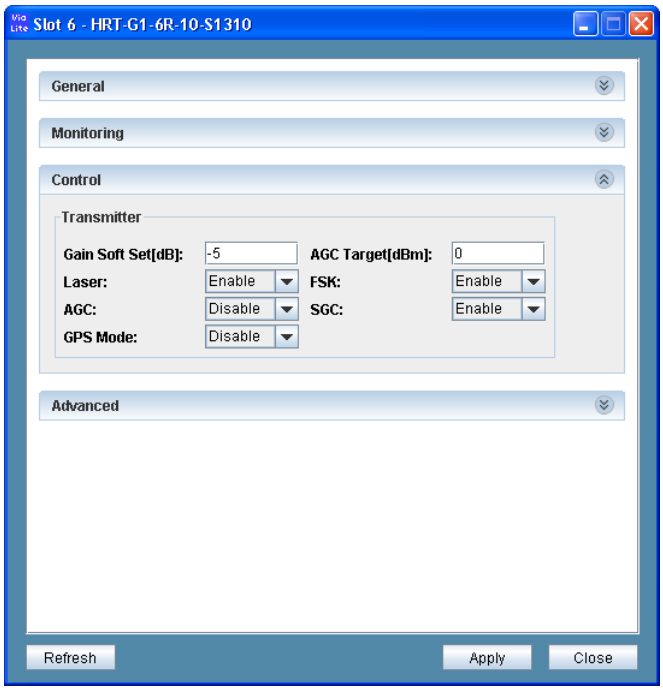
To change the GPS mode status:



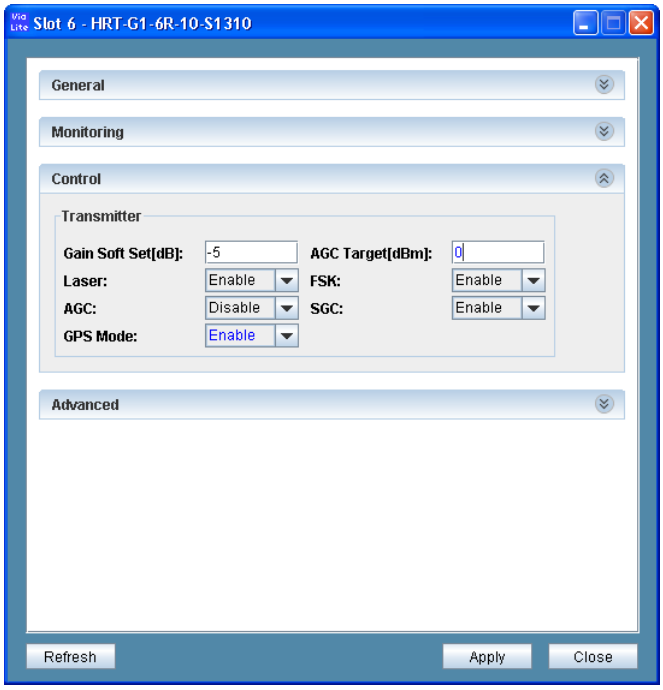
1. Left click slot GUI image, this will open the slot window



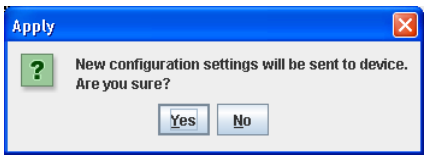
2. Maximise the CONTROL box



3. Check the GPS mode status, choose the desired status using the pull down menu

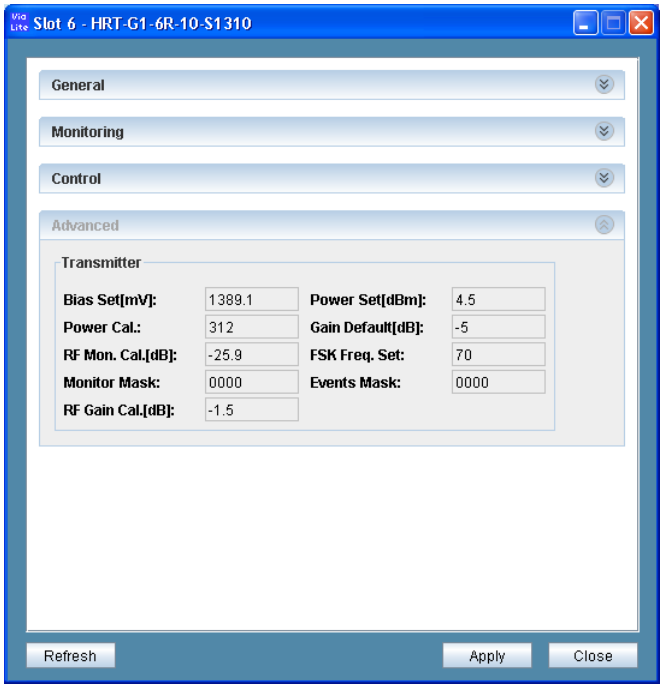


4. The desired status will now be shown in the box
5. Click the APPLY button



6. You will be asked to confirm the action, click YES if you are sure
7. The change will take effect on the next polling cycle of the slot
8. You can confirm that the change is in effect by opening the MONITORING box

7.2.3 Slot window for TX type, advanced



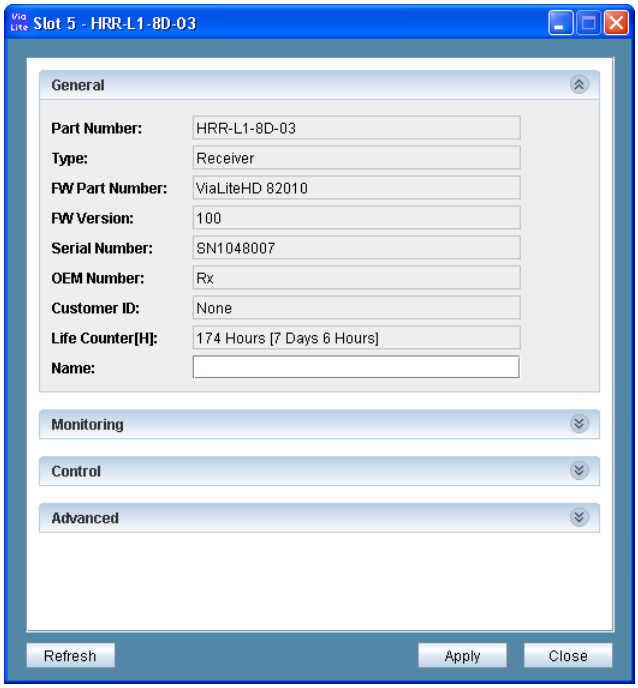
Slot window – TX type, advanced

Bias set – This is the factory set laser power control loop DC target voltage, measured in millivolts
Power cal – This is the factory optic monitor ADC calibration set point, measured in digital steps.
RF mon cal – This is the RF detector calibration, the ratio of internal measured to rear port power in Z0 ohms, measured in decibels
Monitor mask – This is a factory setting that can be used to mask some analogue alarms
RF gain cal – This is a factory setting that can be used to calculating AGC thresholds, see section 7.2.2.6

Power set – This is the factory set average laser power, measured in decibel milli watts
Gain default – This is the factory set default gain for the module, measured in decibels
FSK freq set – This is the factory setting for the FSK tone frequency, measured in digital steps.
Events mask – This is a factory setting that can be used to mask some digital alarms

7.3 Slot windows for RX type

The RX type module will open with the GENERAL box maximised



7.3.1 Slot window for RX type, monitoring

Slot window – RX type, monitoring

Supply voltage – This is the supply voltage measured at the input to the module, measured in volts
RF power – This is the RF power measured at the input to the laser diode, measured in decibel milli watts

RLL – Received light level, measured in decibel milli watts.
RF gain – This is the electro optic gain of the module measured in decibels.

FSK detect - This shows if an FSK low speed digital carrier has been detected, it can ON (carrier present) or OFF (no carrier).
MGC status – This is the manual gain control status, it can ON or OFF.
SGC status – This is the software gain control status, it can ON or OFF.
GPS status - This shows the status of the GPS mode, it can be ON or OFF.

FSK status –This is the frequency shift key digital communications channel status, it can be ENABLED (on) or DISABLED (off).
AGC status – This is the automatic gain control status, it can be ENABLED (on) or DISABLED (off).
AGC mode - This is the automatic gain control mode, it can be OFF or RLL or RF

Major alarm –This is the major alarm status, it can be ON (alarm active) or OFF (good).
AGC alarm –This is the automatic gain control alarm status, it can be ON (alarm active) or OFF (good).
RLL alarm – This is the received light level alarm status, it can be ON (alarm active) or OFF (good).
Gain alarm – This is the RF gain alarm status, it can be ON (alarm active) or OFF (good).

Minor alarm –This is the minor alarm status, it can be ON (alarm active) or OFF (good).
Vcc alarm –This is the (input) voltage alarm status, it can be ON (alarm active) or OFF (good).
Level alarm –This is the RF power level alarm status, it can be ON (alarm active) or OFF (good).

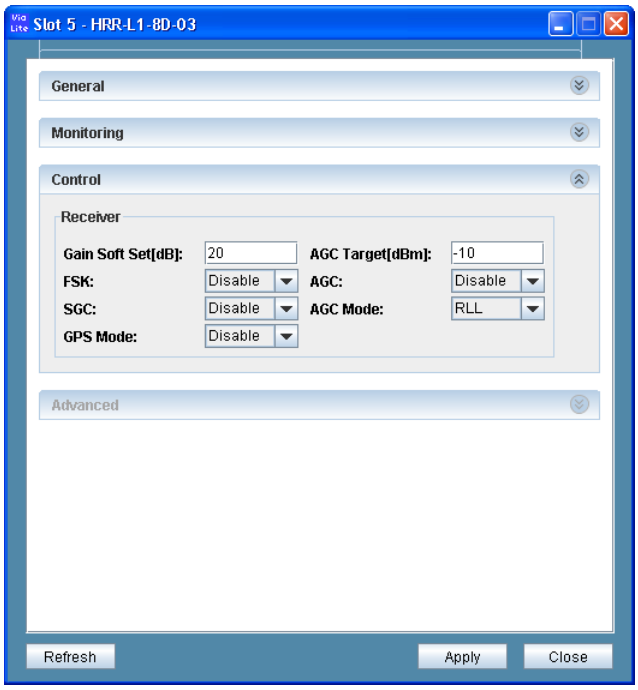
7.3.1.1 Slot window for RX type, monitoring, note on RX AGC modes

When set to operate in AGC mode the RX module can operate in either RLL or RF control mode

When operating in RLL mode, the RX module, will compensate for any optical loss by increasing the modules gain by 2dB of RF gain for each 1dB in reduction in received light level, from default 3mW (4.7dBm) optical output of a ViaLite transmitter. In this mode the AGC TARGET data is not required; any data value set in the AGC TARGET will be ignored. The gain is controlled in 0.5dB steps.

When operating in RF mode, the RX module will use a slow control loop to set the power at the monitor to the AGC TARGET level. The gain is continuously adjusted and is controlled in 0.5dB steps

7.3.2 Slot window for RX type, control



Slot window – RX type, control

Gain soft set – This sets the value of the set electro optic gain, measured in decibels
FSK – This sets the status of the frequency shift key digital communications channel, it can be ENABLED (on) or DISABLED (off).
SGC – This sets the software gain control status, it can be ENABLED (on) or DISABLED (off).
GPS mode –This sets the GPS load status, it can be ENABLED (on) or DISABLED (off).

AGC target – This sets the target value for the AGC control loop module, measured in decibel milli watts.
AGC – This sets the automatic gain control status, it can be ENABLED (on) or DISABLED (off).
AGC mode – This set the mode for the automatic gain, it can be driven by RLL (received light level) or RF (radio frequency) power

7.3.2.1 Slot window for RX type, control, gain control priorities

There are a number of methods by which the gain maybe controlled depending on module type. It is possible to make a number of them active simultaneously. In this case the module firmware will discriminate by order of priority.

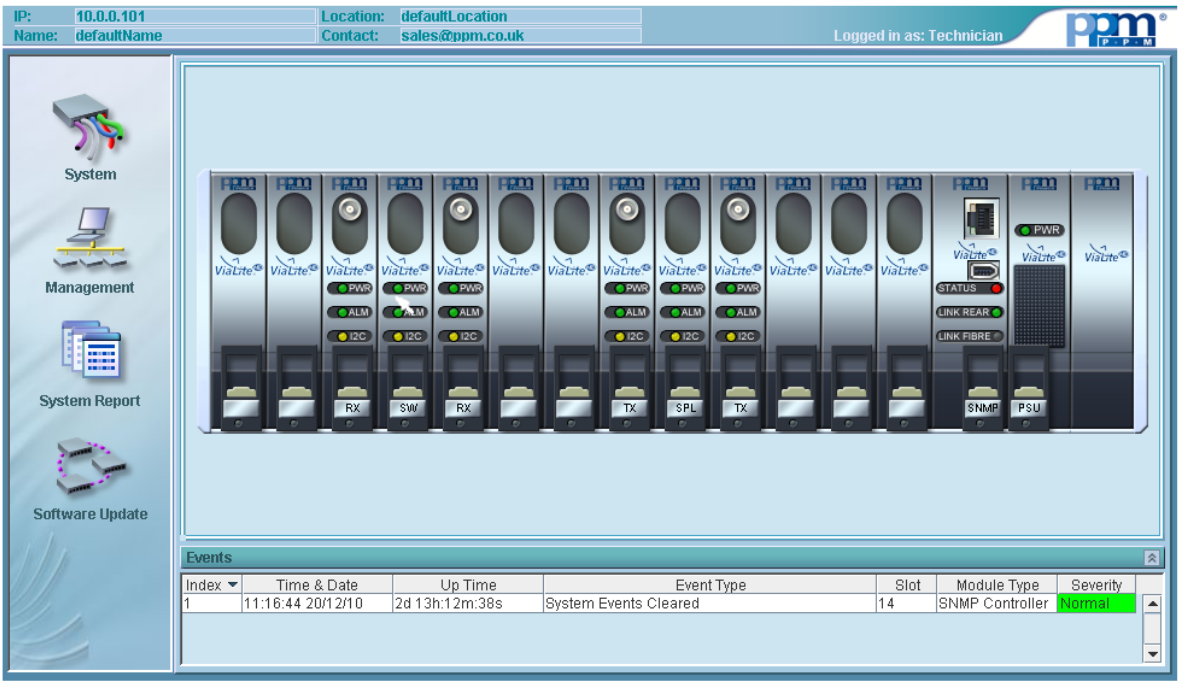
Highest Priority	MGC, manual gain control set using module hardware switches, available on rack modules
	SGC, soft gain control, set via controller
	AGC, Automatic gain control, set via controller
Lowest Priority	Default gain, Factory pre-set gain

The gain set by MGC is not reported through the control interface

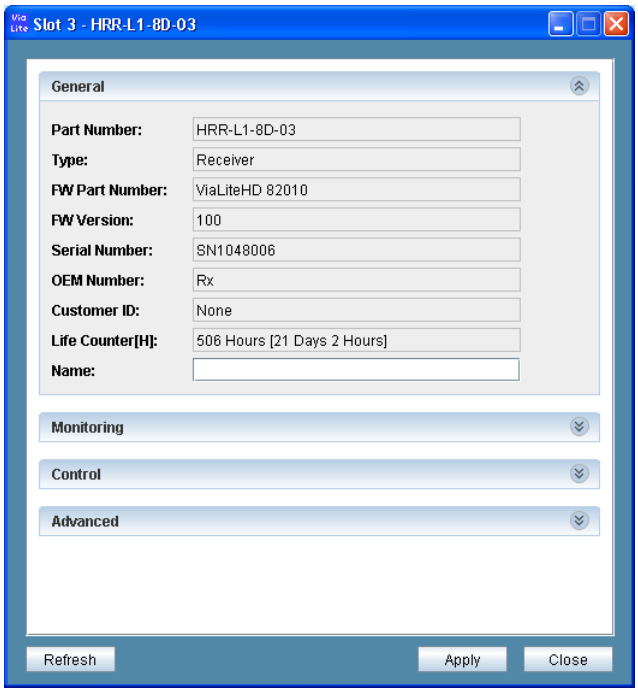
7.3.2.2 Slot window for RX type, control, turning on SGC and setting the soft gain

Note that the SGC settings will ONLY be effective when BOTH the MGC switches are all set in the OFF position (factory default) AND the AGC status is DISABLED

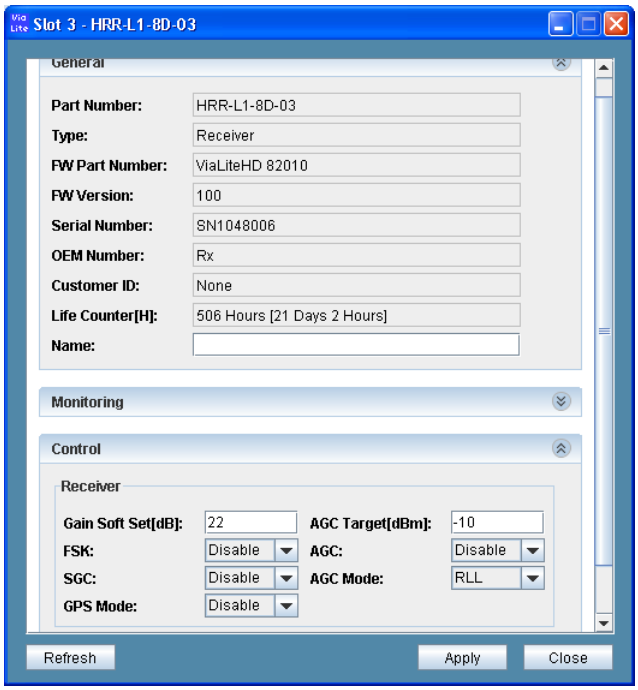
To change the SGC:



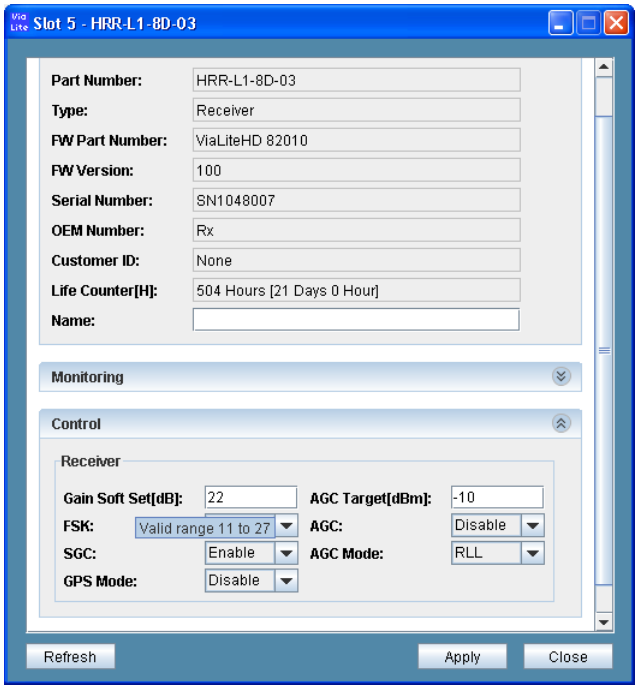
1. Left click slot GUI image, this will open the slot window



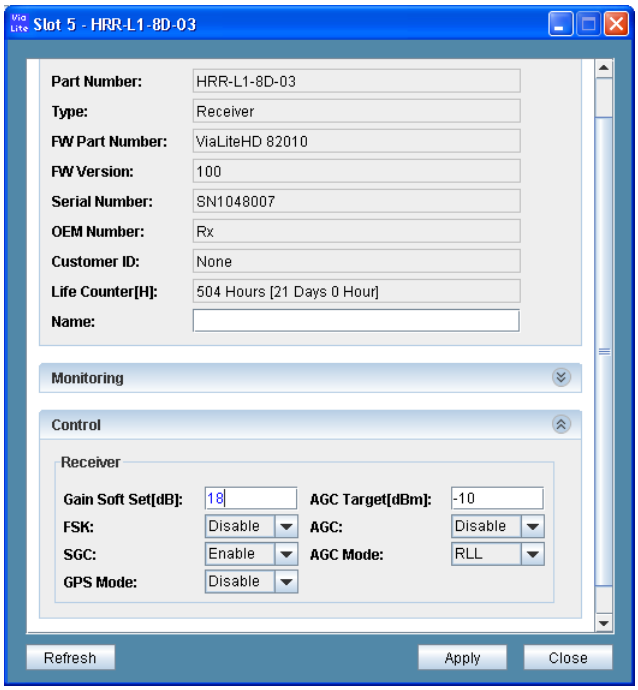
2. Maximise the CONTROL box



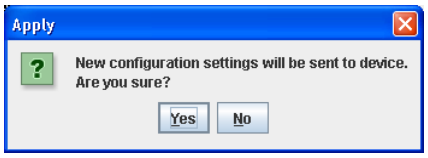
3. Check that the AGC status is DISABLED, if not set it to DISABLED using the pull down menu
4. Check that the SGC status is ENABLED, if not set it to ENABLED using the pull down menu



5. You may hover over the GAIN SOFT SET box to determine the valid SGC range
6. Enter the desired value into the GAIN SOFT SET box



7. The desired status will now be shown in the box
8. Click the APPLY button



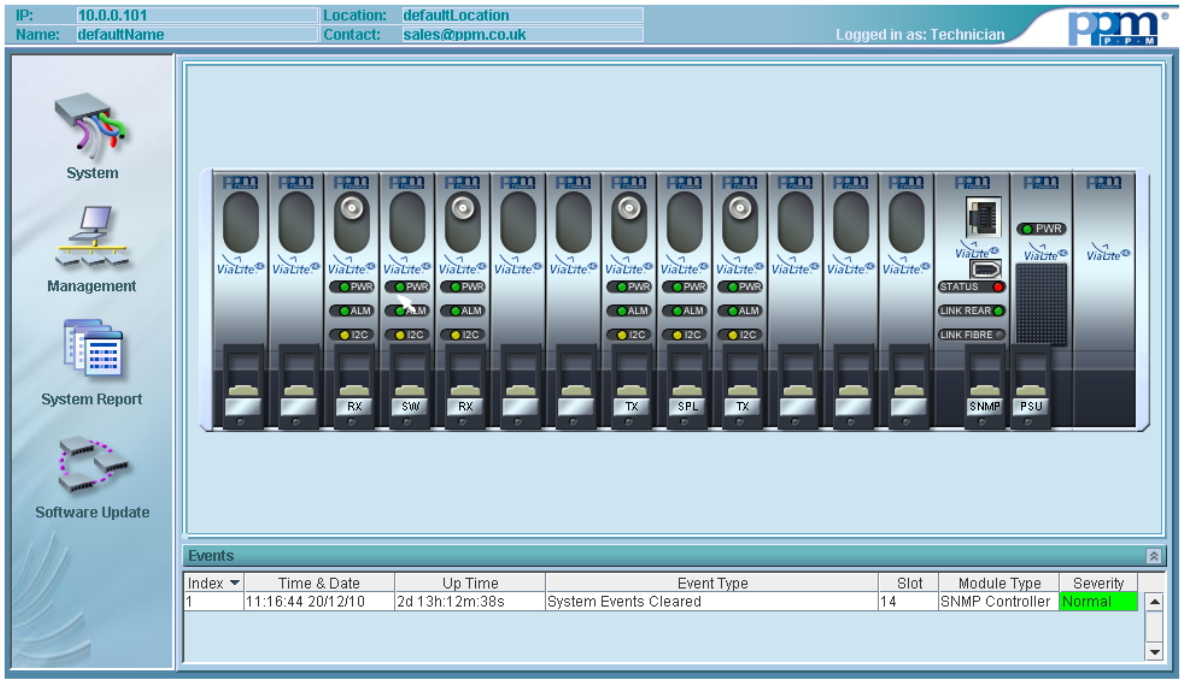
9. You will be asked to confirm the action, click YES if you are sure
10. The change will take effect on the next polling cycle of the slot
11. You can confirm that the change is in effect by opening the MONITORING box

Note: The gain setting is rounded to closest 0.5dB step

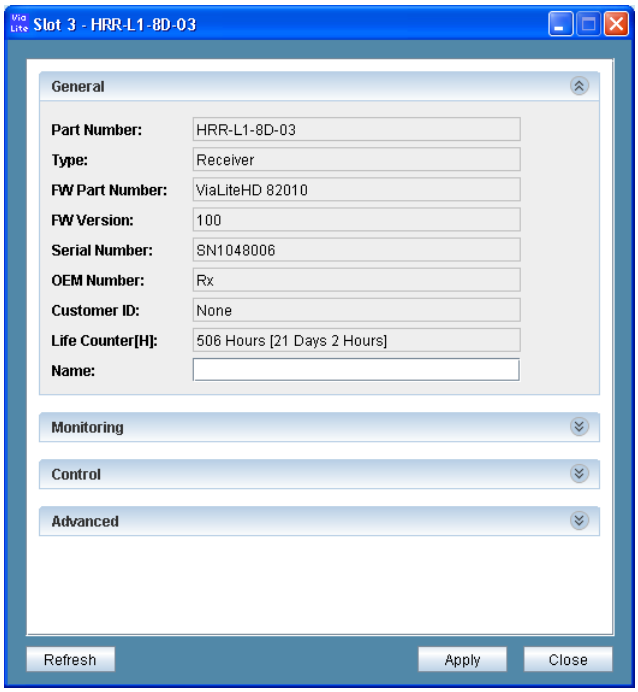
7.3.2.3 Slot window for RX type, control, turning on AGC and setting the AGC target

Note that the AGC settings will ONLY be effective when the MGC switches are all set in the OFF position (factory default).

To change the AGC:

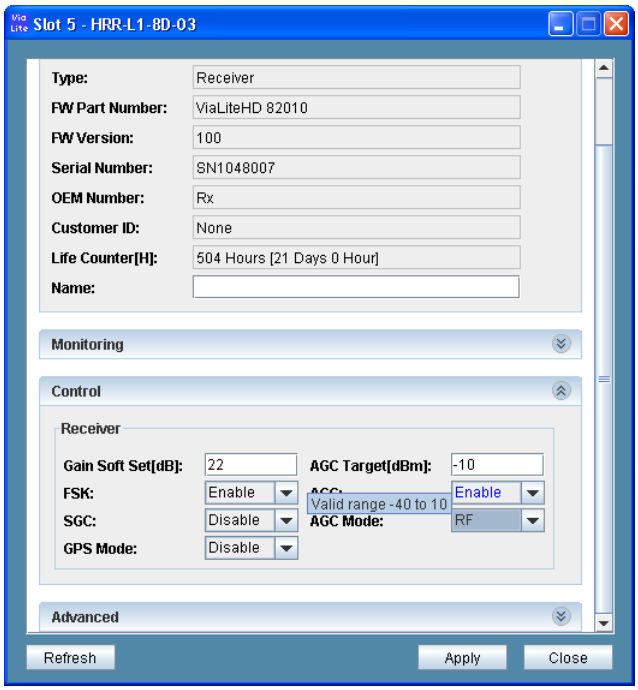


1. Left click slot GUI image, this will open the slot window



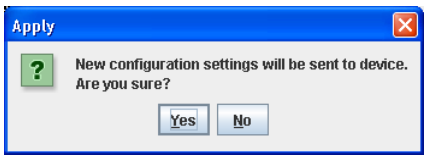
2. Maximise the CONTROL box

3. Check that the AGC status is ENABLED, if not set it to ENABLED using the pull down menu
4. Next choose the AGC MODE either RF or RLL



5. You may hover over the AGC TARGET box to determine the valid AGC range
6. Enter the desired value into the AGC TARGET box

7. The desired status will now be shown in the box
8. Click the APPLY button



9. You will be asked to confirm the action, click YES if you are sure
10. The change will take effect on the next polling cycle of the slot
11. You can confirm that the change is in effect by opening the MONITORING box

Note: The gain setting is rounded to closest 0.5dB step

7.3.2.4 Slot window for RX type, control, calculating AGC target level, RF mode

The variations in the output level can be compensated by using receiver AGC control in RF mode. This can be used for to fix the average RF output power.

The AGC TARGET LEVEL is the RF power level that the module aims to compensate for. To find out the value for AGC TARGET LEVEL required when OUTPUT POWER is known, you may use the equation below

AGC TARGET LEVEL = OUTPUT POWER – (RF GAIN CAL –RF MON CAL)
OR
OUTPUT POWER = AGC TARGET LEVEL - RF GAIN + (RF GAIN CAL –RF MON CAL)

Note: PPM suggest that activating RF mode AGC on both transmitter and receiver be treated with caution as the transmit power control may disturb the receive power control loop stability

7.3.2.5 Slot window for RX type, control, calculating AGC target level, RLL mode

The variations in received optical level can be compensated by using receiver AGC control in RLL mode. In this mode the receiver will compensate for optical loss by adjusting the modules RF gain, it will always try and mimic a zero loss optical link. In this AGC mode the AGC TARGET LEVEL is not used.

In RLL mode the you can either use the unit in its DEFAULT gain setting or you may set a new gain by programming the desired SOFT GAIN SET with SGC enabled before enabling AGC and setting RLL mode.

In RLL mode, the AGC loop adjusts the RF gain automatically according to, not the RF power, but the RLL value. If RLL is less than the default 4.5dBm, i.e., non-zero optical loss, the AGC loop will try to increase the gain so that the RF output level would be maintained.

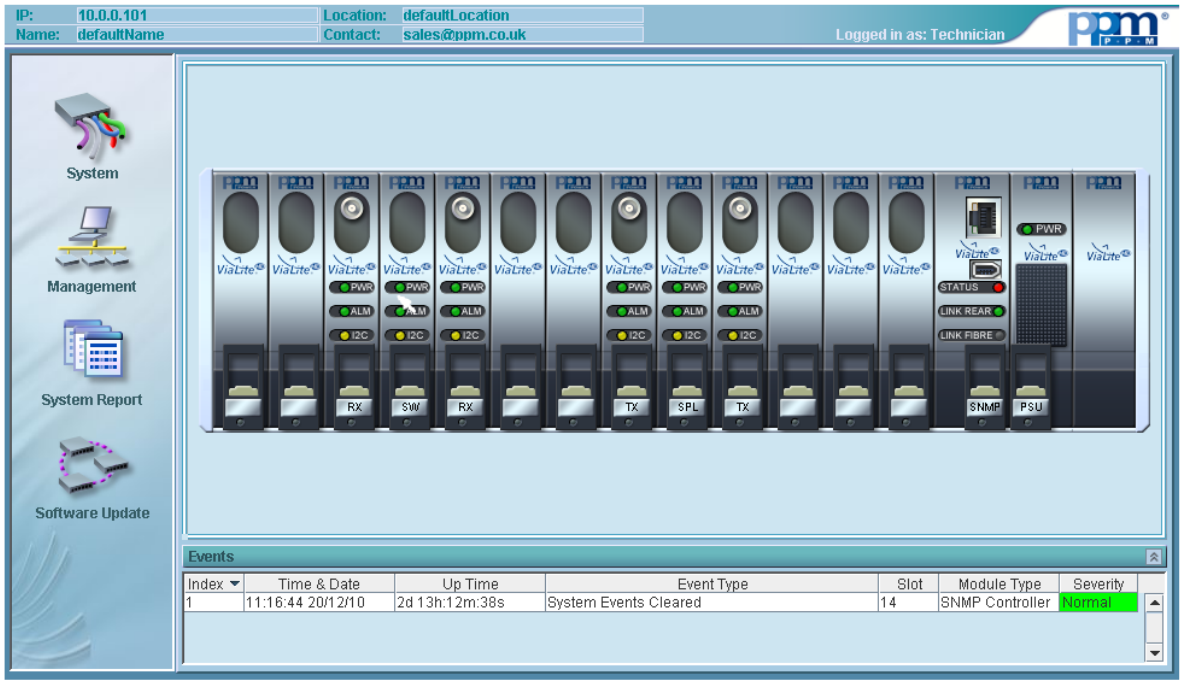
This mode is useful if one wish to compensate for the optical loss to maintain a constant optical cable and receiver gain.
RLL mode can be used in conjunction with transmitter RF mode AGC. This allows the optical loss to be automatically compensated.

If RLL gain control is active
OUTPUT POWER = AGC TARGET LEVEL + RF GAIN (RX) + (RF GAIN CAL –RF MON CAL)

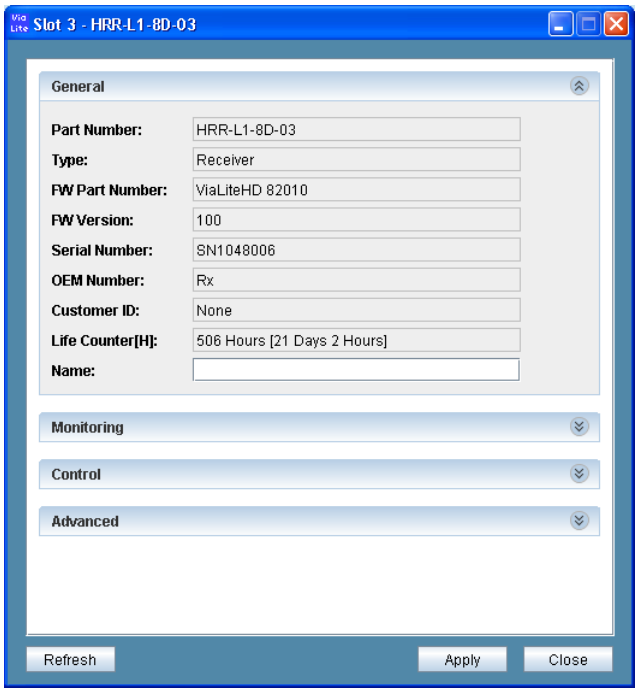
7.3.2.6 Slot window for RX type, control, turning ON and OFF FSK

Note 1: For the digital FSK channel to operate correctly the connected receiver and transmitter must have FSK capability
Note 2: The FSK control box is shown on modules with and without FSK digital channel, its status doesn't not affect modules not fitted with this feature.

To change the FSK status:

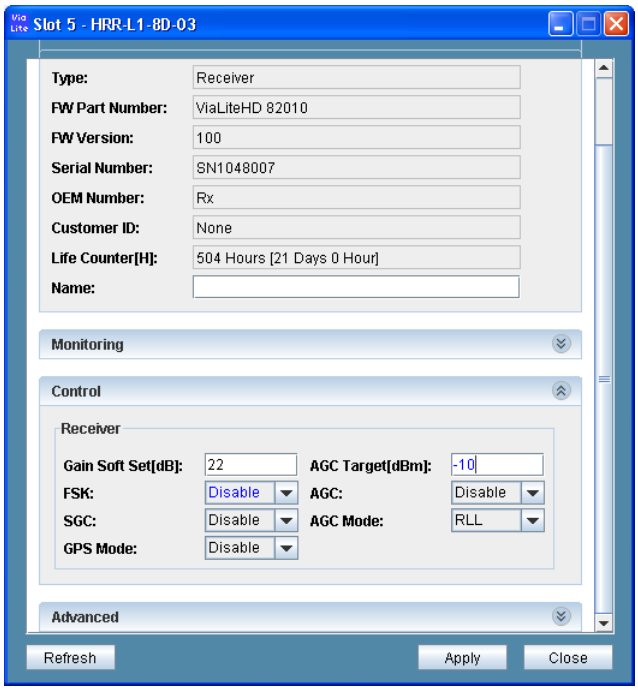


1. Left click slot GUI image, this will open the slot window

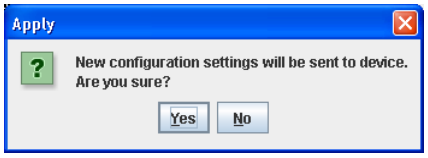


2. Maximise the CONTROL box

3. Check the FSK status, choose the desired status using the pull down menu



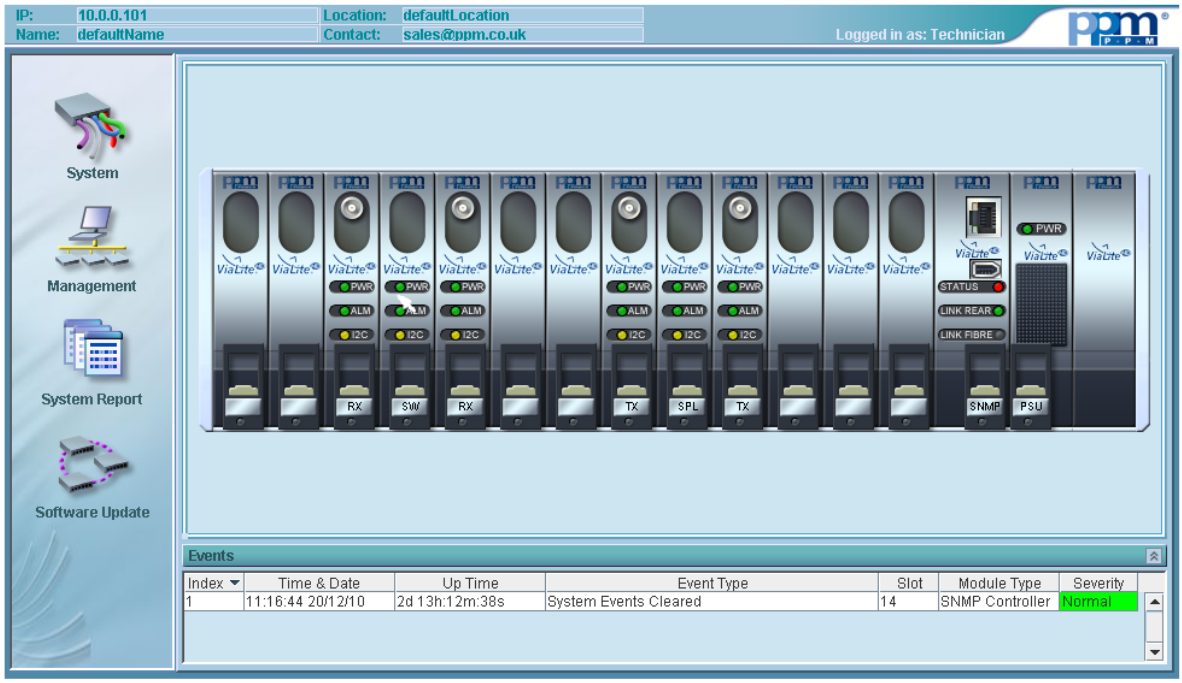
4. The desired status will now be shown in the box
5. Click the APPLY button



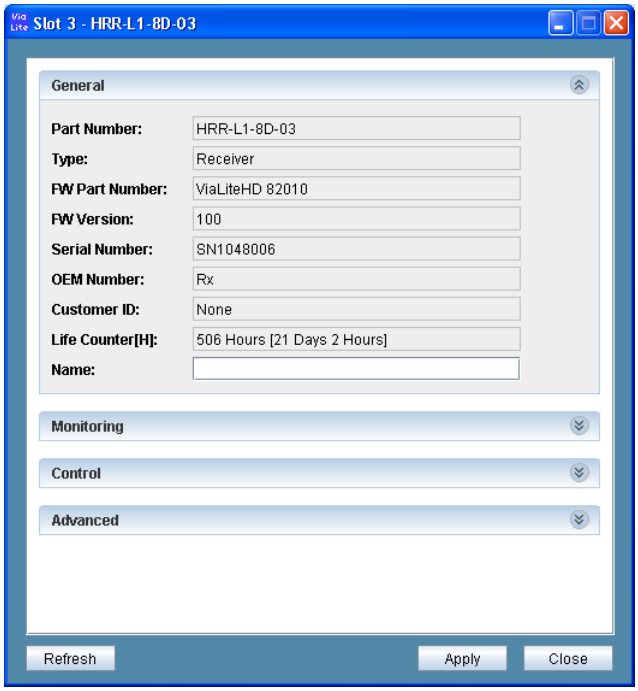
6. You will be asked to confirm the action, click YES if you are sure
7. The change will take effect on the next polling cycle of the slot
8. You can confirm that the change is in effect by opening the MONITORING box

7.3.2.7 Slot window for RX type, control, enabling and disabling GPS mode

To change the GPS mode status:



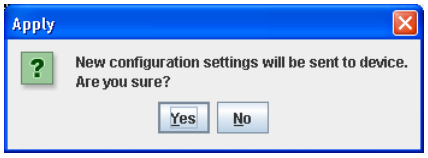
9. Left click slot GUI image, this will open the slot window



10. Maximise the CONTROL box

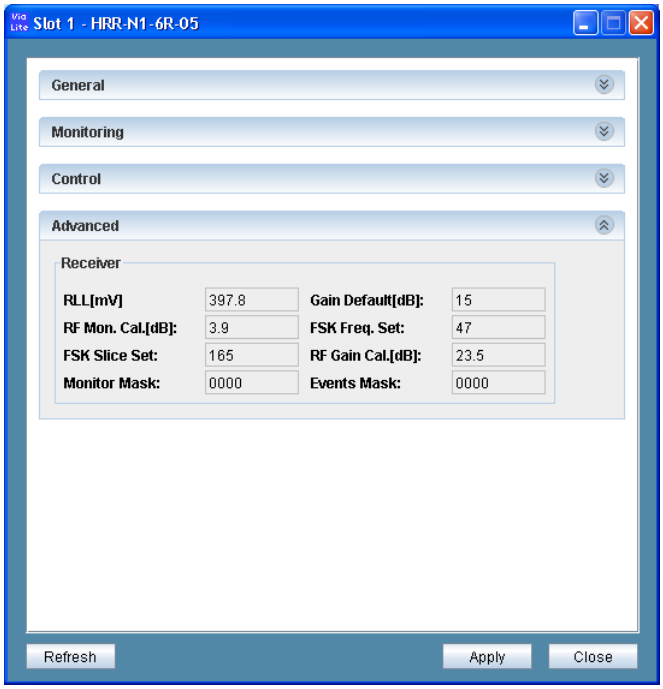
11. Check the GPS mode status, choose the desired status using the pull down menu

12. The desired status will now be shown in the box
13. Click the APPLY button



14. You will be asked to confirm the action, click YES if you are sure
15. The change will take effect on the next polling cycle of the slot
16. You can confirm that the change is in effect by opening the MONITORING box

7.3.3 Slot window for RX type, advanced



Slot window – RX type, advanced

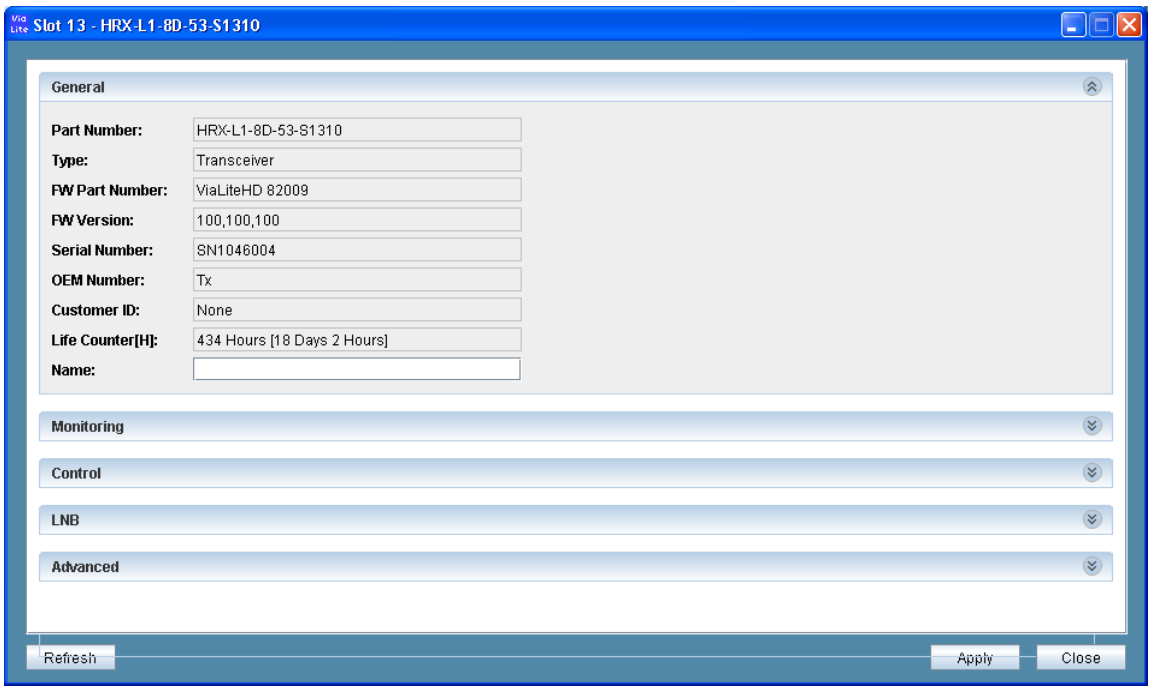
RLL – This is the factory calibration setting for RLL, measured in millivolts.

RF mon cal – This is the RF detector calibration, the ratio of internal measured to rear port power in Z0 ohms, measured in decibels
FSK Slice set – This is the factory setting for the FSK decision level, measured in digital steps.
Monitor mask – This is a factory setting that can be used to mask some analogue alarms

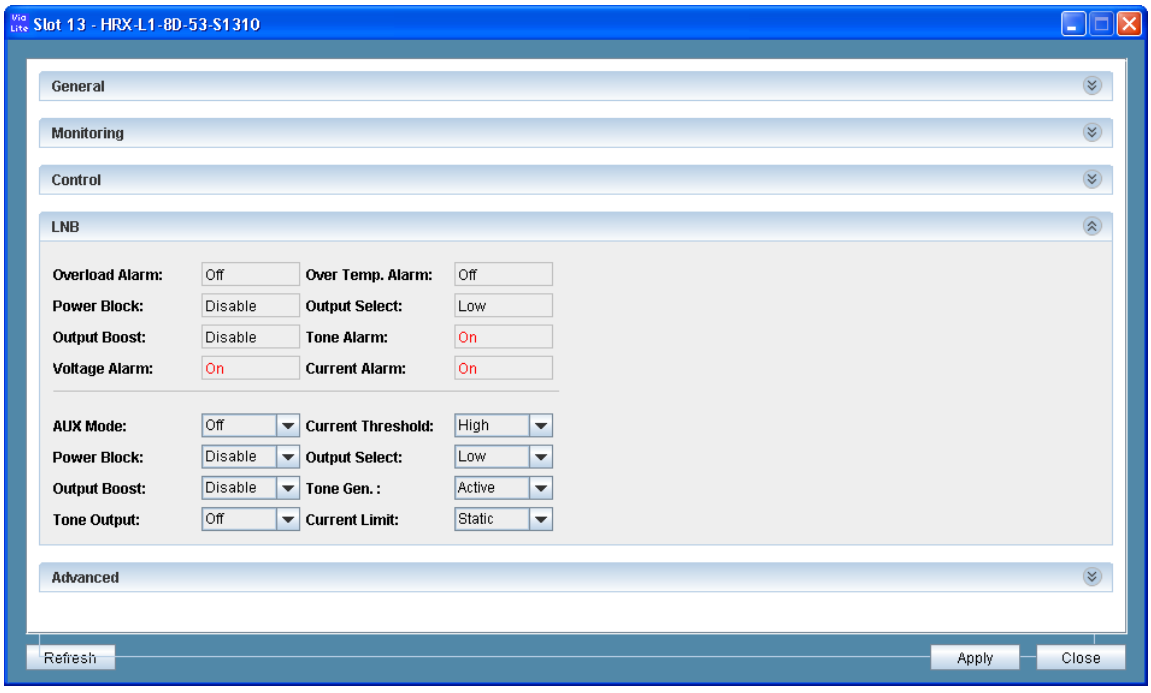
Gain default – This is the factory set default gain for the module, measured in decibels
FSK freq set – This is the factory setting for the FSK tone frequency, measured in digital steps.
RF gain cal – This is a factory setting that can be used to calculating AGC thresholds, see section 7.3.2.4
Events mask – This is a factory setting that can be used to mask some digital alarms

Slot windows for LNB type

Some types of single transmitter, dual transmitter and transceiver are equipped with LNB power supplies. These have there own control box in the TX type area. The LNB box can be expanded by clicking the arrow on the right of this box



7.3.4 Slot windows for LNB type, LNB



The LNB box contains both the monitors and controls for this function

Slot window – LNB type, monitoring

Overload alarm – This is the maximum output current status, it can be ON (alarm active) or OFF (good).
Power Block- This is the power block status, it can be ENABLED (on) or DISABLED (off).
Output boost – This is the LNB voltage boost status, it can be ENABLED (+1V additional) or DISABLED (no extra voltage).
Voltage alarm – This is the voltage alarm status, it can be ON (alarm active) or OFF (good).

Over temp. alarm – This is the over temperature alarm status, it can be ON (alarm active) or OFF (good).
Output select – This is the output voltage status, it can be LOW (13V nominal) or HIGH (18V nominal).

Tone alarm – This is the tone alarm status, it can be ON (alarm active) or OFF (good).
Current alarm – This is the minimum output current alarm status, it can be ON (alarm active) or OFF (good).

Slot window – LNA type, control

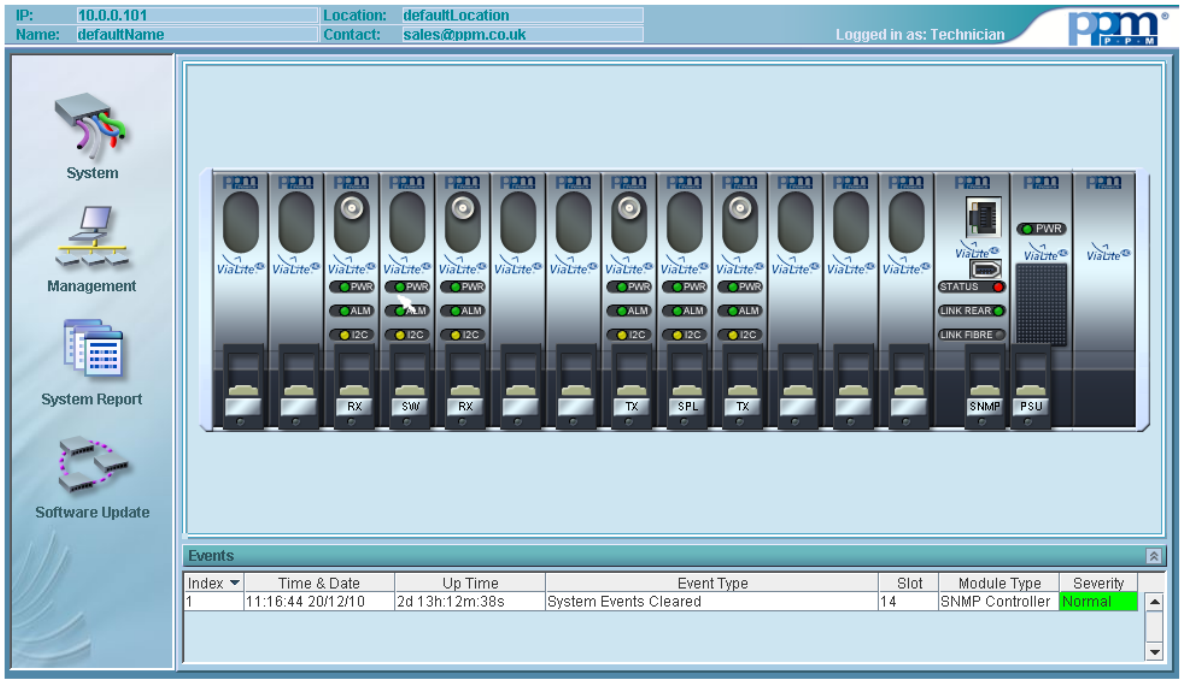
AUX mode – This sets the auxiliary mode status, it can be ON (22V nominal output) or DISABLED (normal).
Power block – This sets the power block status, it can be ENABLED (on) or DISABLED (off).
Output boost – This sets the output boost status, ENABLED (+1V additional) or DISABLED (no extra voltage).
Tone output - This sets the output tone status, ON (22kHz tone) or OFF (no tone).

Current threshold – This sets the minimum current alarm threshold, it can be HIGH (12mA) or LOW (6mA)
Output select – This sets the output voltage selection, , it can be LOW (13V nominal) or HIGH (18V nominal).
Tone gen. – This set the tone generation type, it can be ACTIVE (22kHz on) or DSQIN (do not use)
Current limit – This sets the current limit, it can be STATIC (simple current clamp) or ACTIVE (pulsed current limiting)

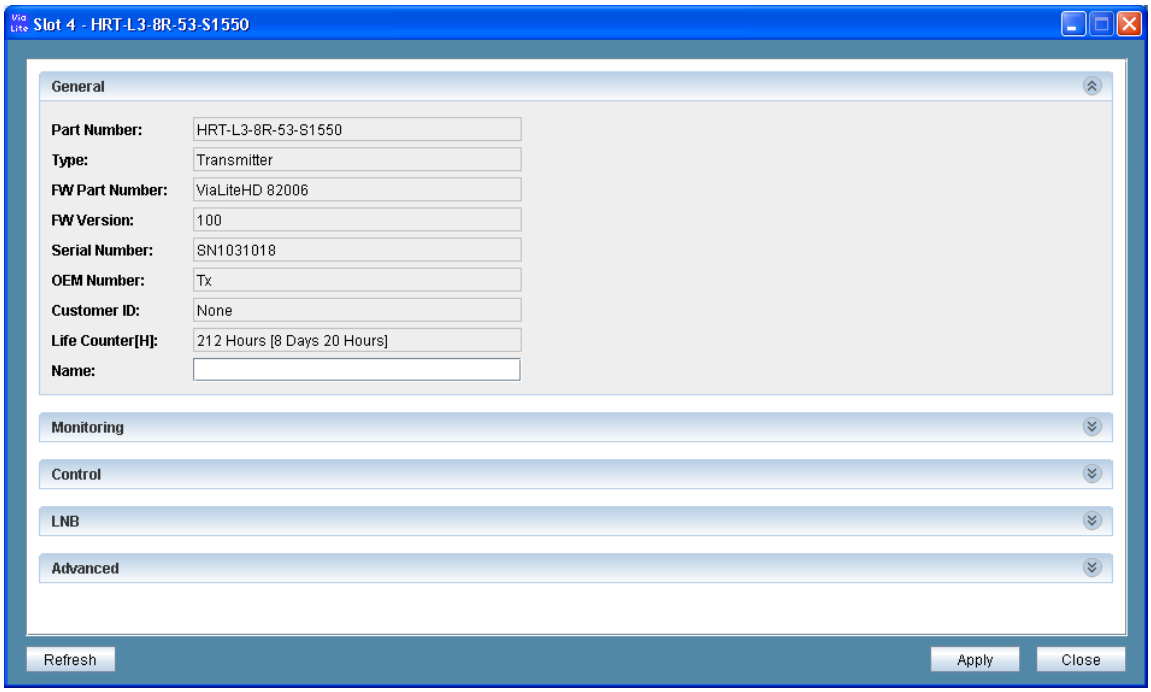
7.3.4.1 Slot windows for LNB type, LNB, changing mode

NOTE: The LNB control box will only be shown on units equipped with the correct hardware

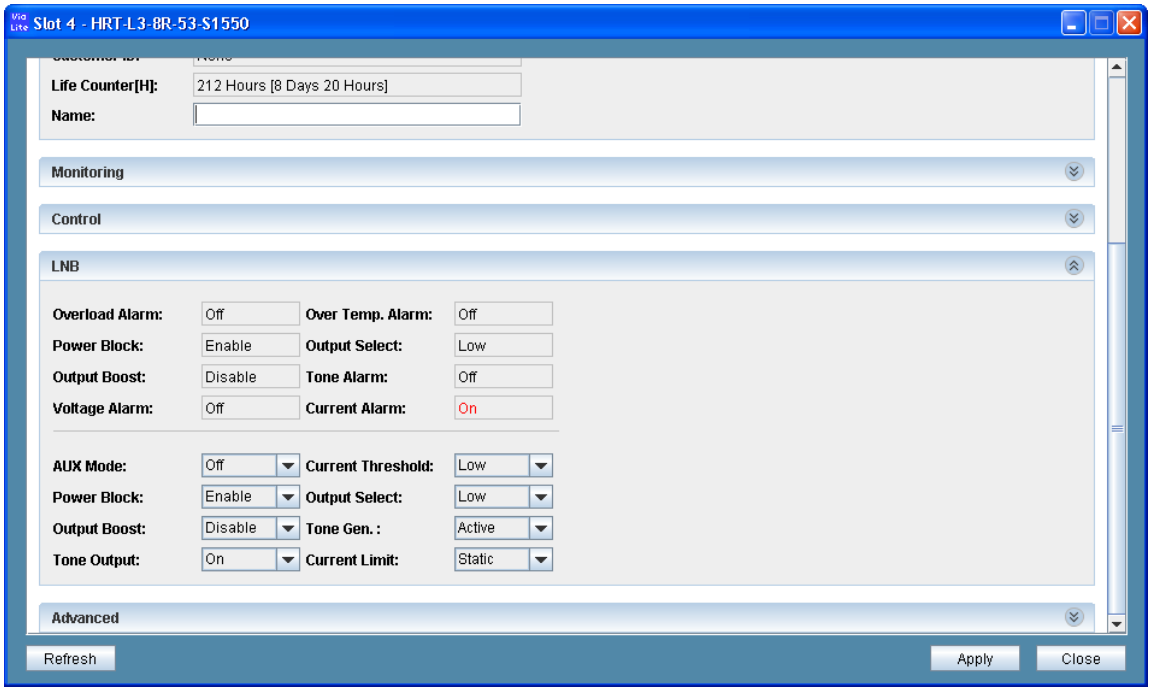
To change the LNB mode



1. Left click slot GUI image, this will open the slot window

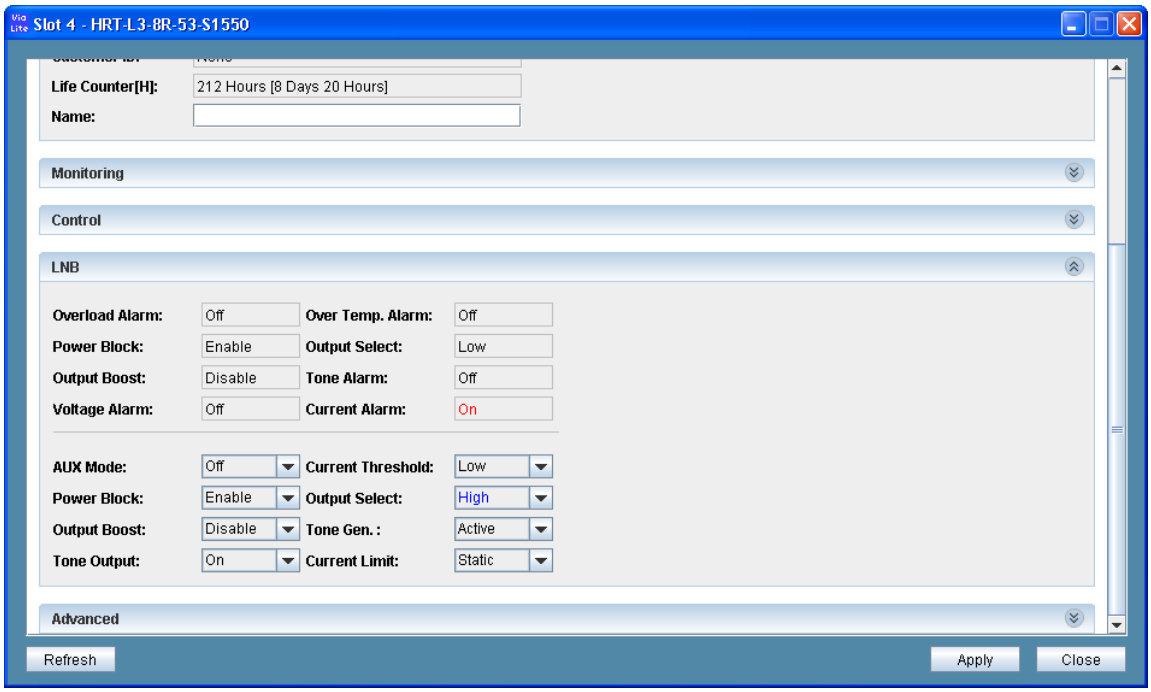


2. Maximise the LNB box

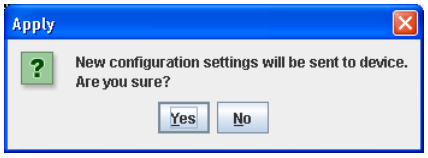


NOTE: The LNB box consist of both an upper MONITORING section and a lower CONTROL section.

3. Check the LNB status, choose the desired status using the pull down menu in the CONTROL section.



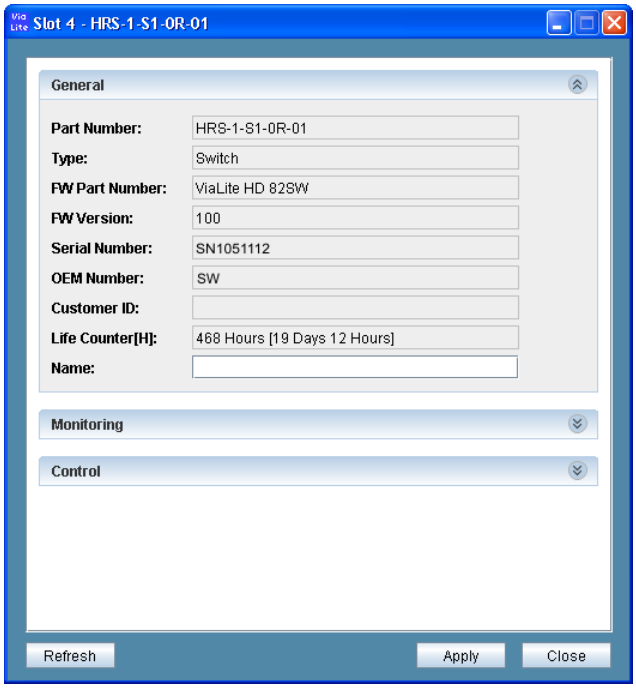
4. The desired status will now be shown in the box.
5. Click the APPLY button.



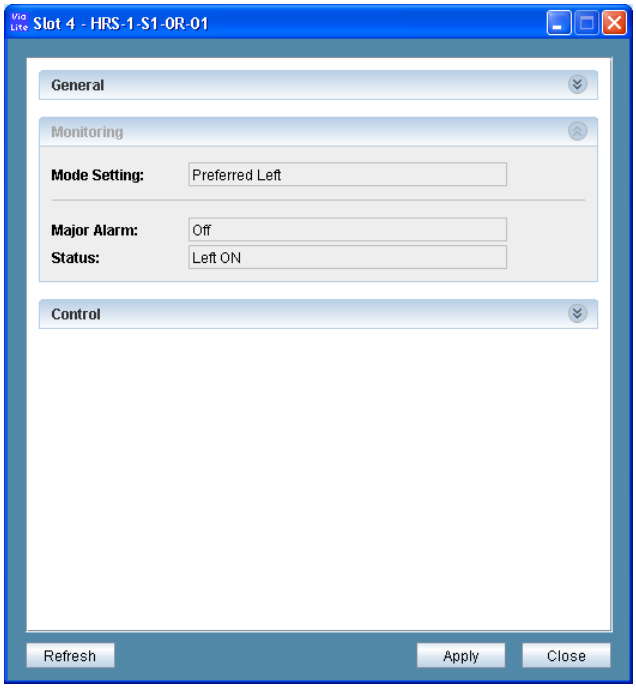
6. You will be asked to confirm the action, click YES if you are sure.
7. The change will take effect on the next polling cycle of the slot.
8. You can confirm that the change is in effect by looking in MONITORING section.

7.4 Slot windows for RF switches type

The RF switches is an active device, it has a window with GENERAL, MONITORING and a CONTROL boxes.



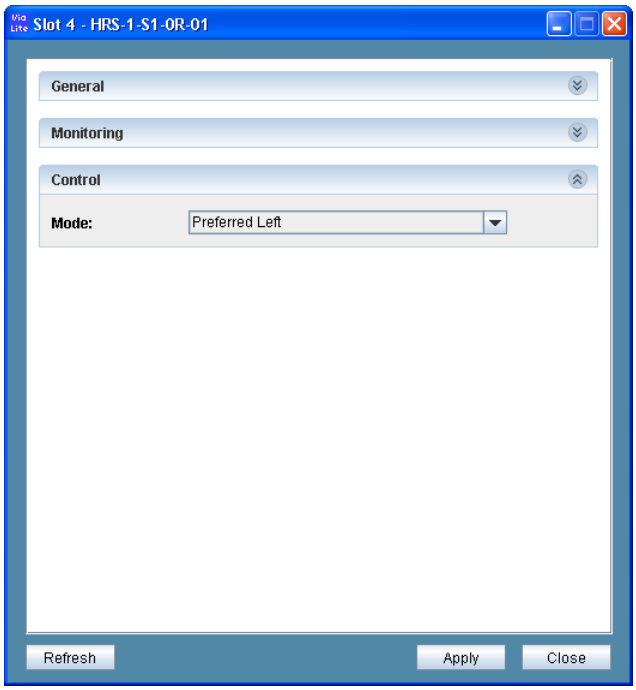
7.4.1 Slot windows for RF switches type, monitoring



The monitoring box contains the following information:

Mode setting – This is the switching configuration in which is set
Major Alarm – This shows the status of the alarm either OFF (good state) or ON (alarm active)
Status – This shows which part the status of the switch either LEFT ON or RIGHT ON (as viewed from front of rack chassis)

7.4.2 Slot windows for RF switches type, control



The control box contains a control box:

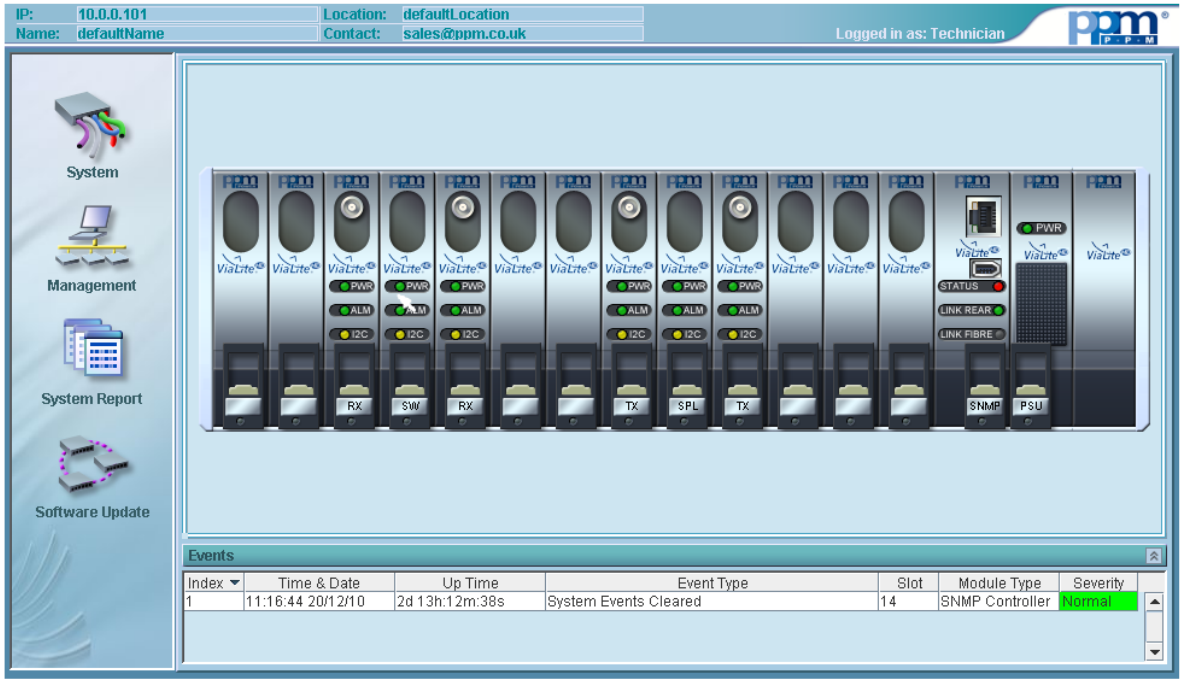
Mode – This is the mode in which the switch is configured, the mode options are:
PREFERRED LEFT – The module is connected to the LEFT hand unit, if this unit alarm it will switch to the RIGHT hand unit.
PREFERRED RIGHT – The module is connected to the RIGHT hand unit, if this unit alarm it will switch to the LEFT hand unit.
FORCED LEFT – The module is connected to the LEFT irrespective of alarm status.
FORCED RIGHT – The module is connected to the RIGHT irrespective of alarm status.

By default all switches are delivered set to PREFERRED LEFT.

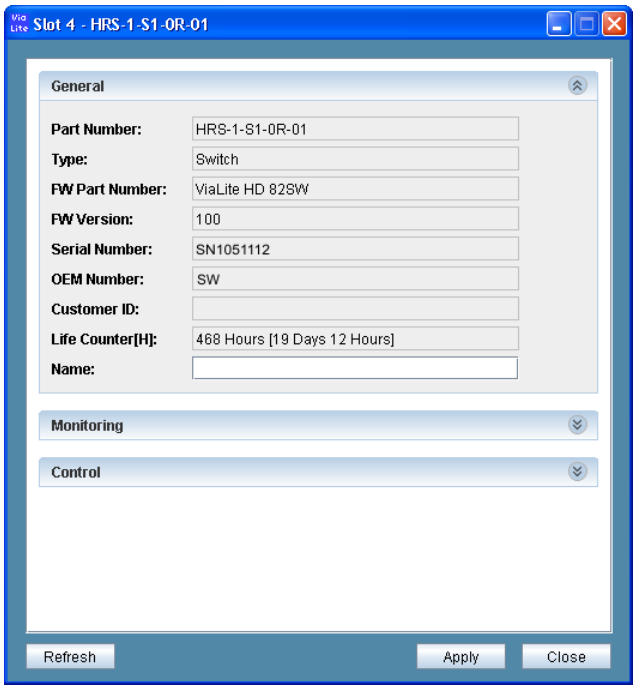
LEFT and RIGHT are reference to the front view of the rack chassis.

7.4.2.1 Slot windows for switches type, change mode

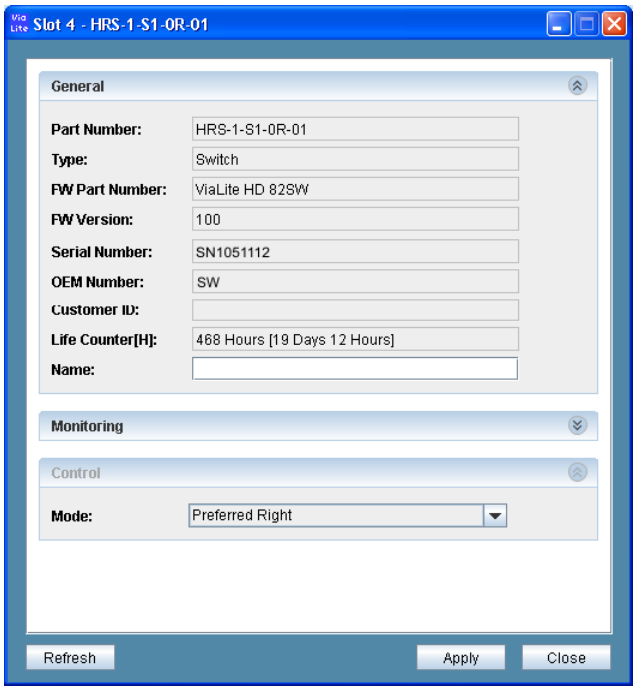
To change the switch mode:



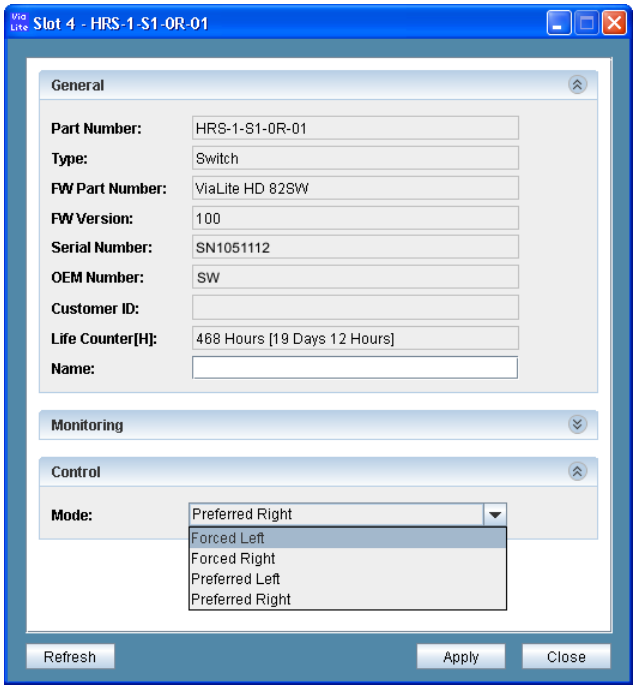
1. Left click on the switches GUI image, this will open the slot window



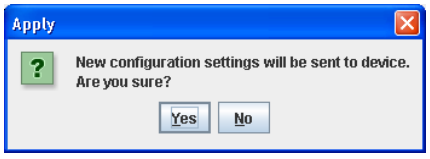
2. Click the arrow on the right of the control box to maximise this box



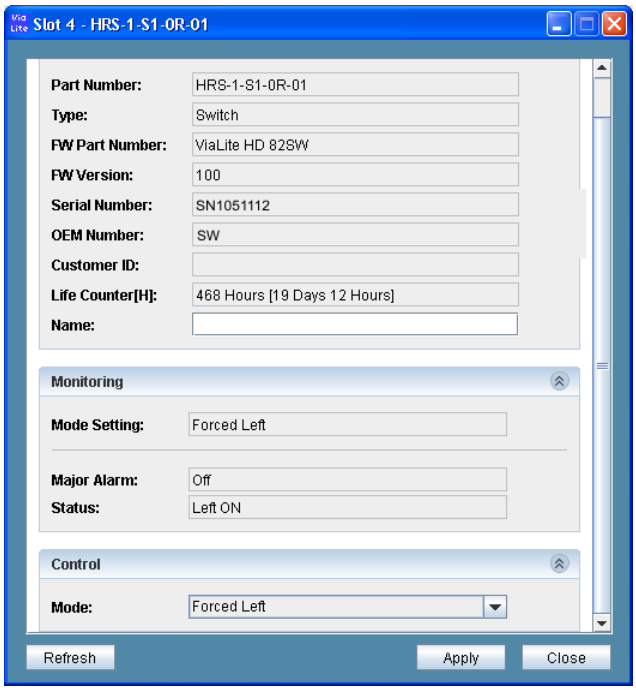
3. Now select the desired mode from the mode pull down menu



4. After having selected the mode, click on the windows apply button



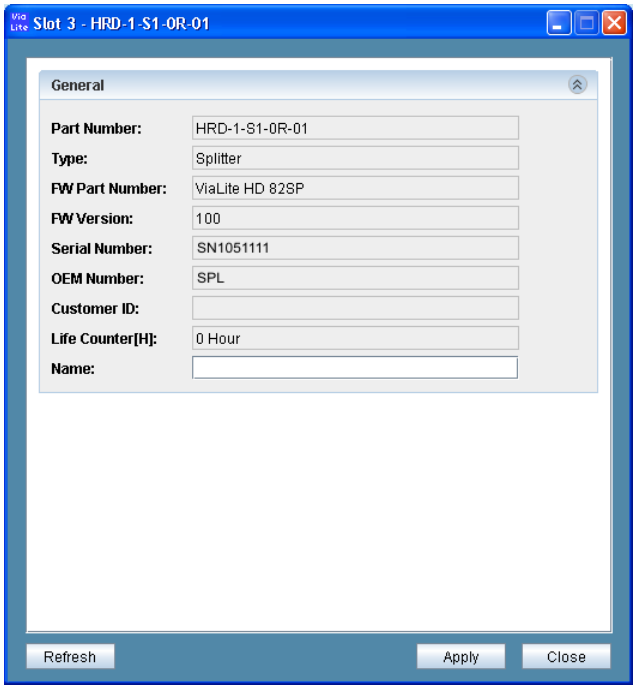
5. You will be asked to confirm the action, click YES if you are sure



6. The change will take effect on the next polling cycle of the slot
7. You can confirm that the change is in effect by opening the MONITORING box and checking the MODE SETTING

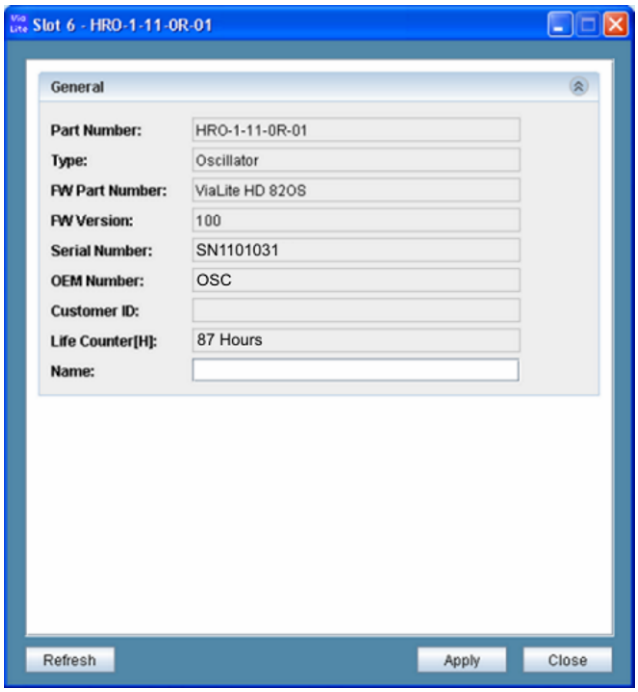
7.5 Slot windows for Splitter type

The RF splitter is a passive device, it has a window with GENERAL box but NO control functions.



7.6 Slot windows for Frequency source type

The Frequency source module is not controllable, it has a window with GENERAL box but NO control functions.

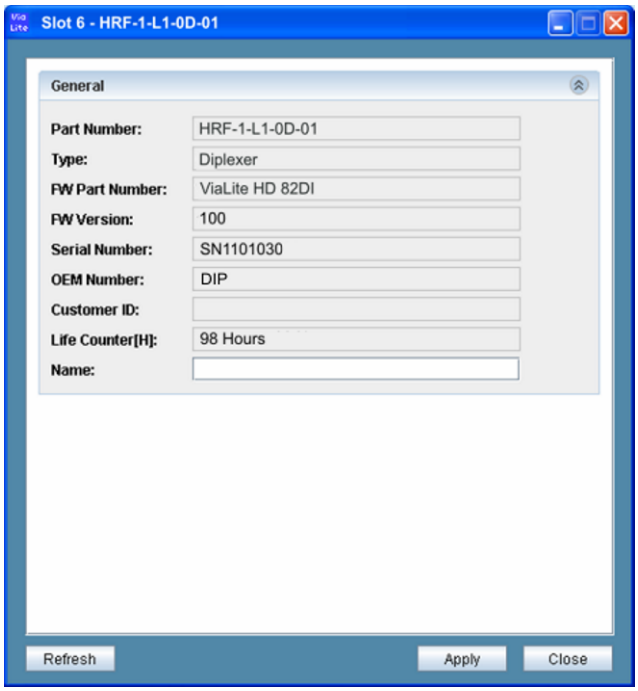


7.7 Slot windows for Redundancy load type

The redundancy load module has no active components or micro processor. It will not be shown on the GUI and has no control window.

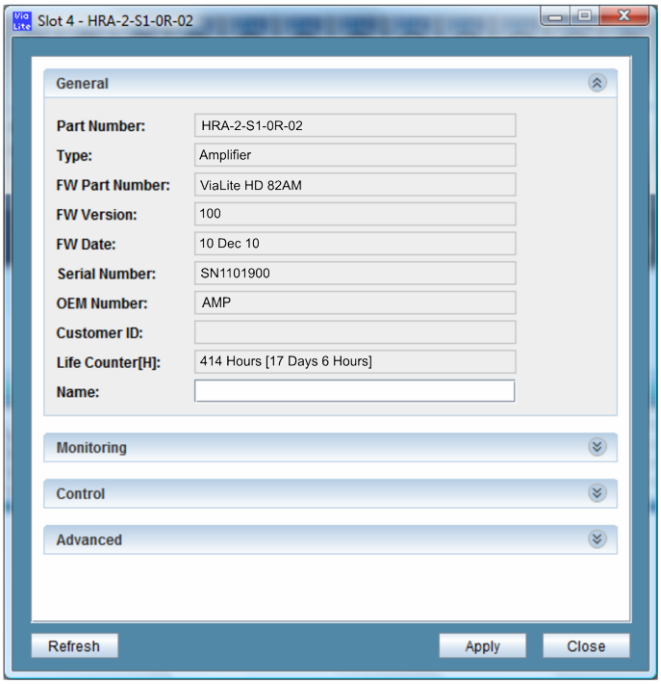
7.8 Slot windows for Diplexer source type

The Diplexer module is not controllable, it has a window with GENERAL box but NO control functions.

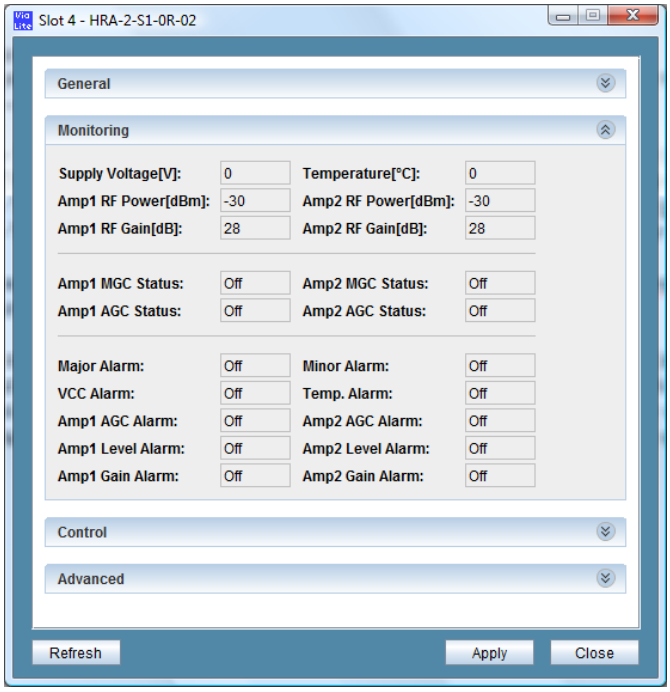


7.9 Slot windows for Amplifier type

The RF amplifier is an active device, it has a window with GENERAL, MONITORING, CONTROL and ADVANCED boxes.



7.9.1 Slot window for Amplifier type, monitoring



Slot window – Amplifier type, monitoring

*Supply Voltage** - This is the supply voltage measured at the input to the module, measured in volts
*Temperature** – This is the board temperature in degrees centigrade.

Major Alarm – This is the major alarm status, it can be ON (alarm active) or OFF (good).
*Vcc Alarm** – This is the (input) voltage alarm status, it can be ON (alarm active) or OFF (good).
Minor Alarm - This is the minor alarm status, it can be ON (alarm active) or OFF (good).
*Temp Alarm** - This is the temperature alarm status, it can be ON (alarm active) or OFF (good).

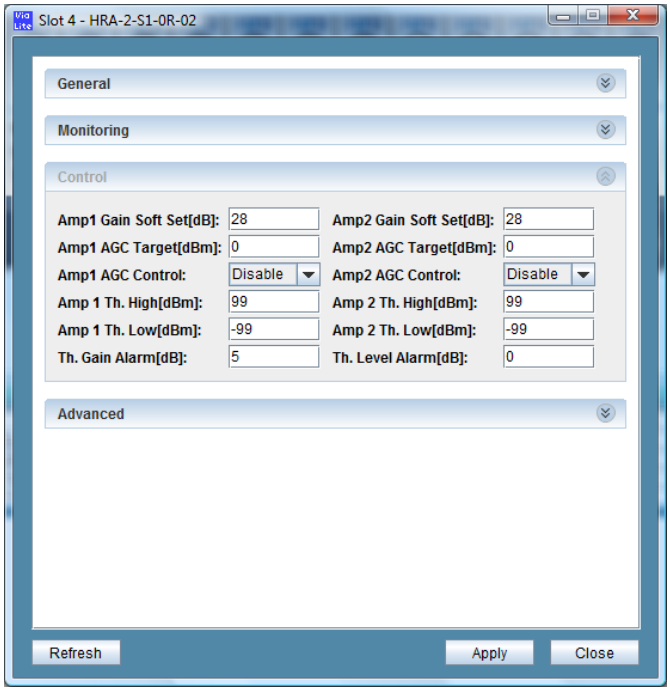
Amp X RF power – This is the RF power of amplifier X measured in decibel miliiwatts at the output.

*Amp X RF gain*** – This is the RF gain of amplifier X measured in decibels.

AMP X MGC status – This is the manual gain control (via DIP switches) alarm status, it can be ON or OFF.
Amp X AGC status – This is the automatic gain control alarm status, it can be ON or OFF.
Amp X level alarm – This is the RF power level alarm status, it can be ON (alarm active) or OFF (good).
Amp X gain alarm – This is the RF gain alarm status, it can be ON (alarm active) or OFF (good).

* These are future features, the data is these fields is not currently valid
** When MGC control is ENABLED (via DIP switches) these reported values are not valid

7.9.2 Slot window for Amplifier type, control



Slot window – Amplifier type, control
*Amp X Gain soft set** – This sets the value of the gain, measured in decibels
*Amp X AGC target** – This sets the target value for the AGC control loop module, measured in decibel milli watts.
*Amp X AGC control** – This sets the software automatic gain control status, it can be ENABLED (AGC on) or DISABLED (AGC off).
Amp X Th High –This sets the output power high MAJOR alarm threshold, measured in decibel milli watts
Amp X Th low – This sets the output power low MAJOR alarm threshold, measured in decibel milli watts
Th Gain Alarm – This sets the gain alarm offset between MINOR and MAJOR alarm, measured in decibel
Th level Alarm – This sets the level alarm offset between MINOR and MAJOR alarm, measured in decibel

** When MGC control is ENABLED (via DIP switches) it takes priority over soft set and AGC

7.9.2.1 Slot windows for Amplifier type, alarm threshold example

If TH. GAIN ALARM is set to 0.
- MAJOR and MINOR alarms will occur at 15dB or lower gain or at 30dB or higher gain

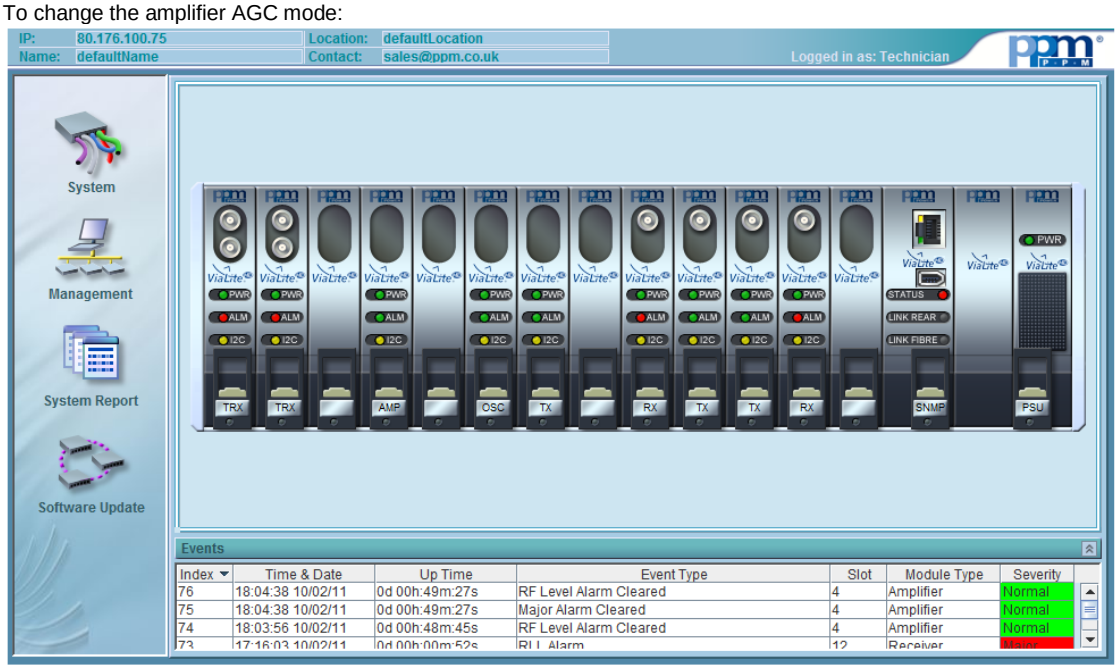
If TH. GAIN ALARM is set to 3
- MINOR alarms will occur at 18dB or lower gain or at 27dB or higher gain
- MAJOR alarms will occur at 15dB or lower gain or at 30dB or higher gain

If AMP1 TH HIGH is set to 10
And AMP1 TH LOW is set to -10
And TH. GAIN ALARM is set to 0
- MAJOR and MINOR alarms will both occur at -10dBm or lower power or at +10dBm or higher power

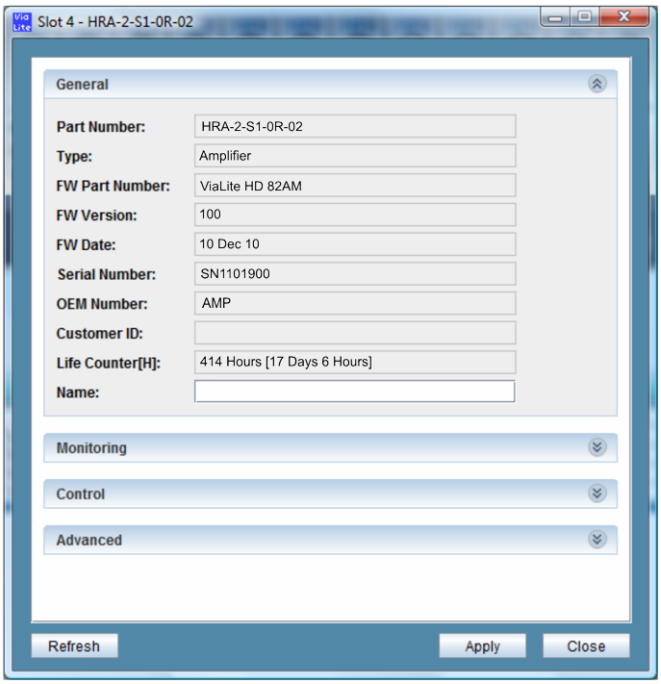
If AMP1 TH HIGH is set to 10
And AMP1 TH LOW is set to -10
And TH. GAIN ALARM is set to 3
- MINOR alarms will occur at -7dBm or lower power or at +7dBm or higher power
- MAJOR alarms will occur at -10dBm or lower power or at +10dBm or higher power

7.9.2.2 Slot windows for Amplifier type, change AGC mode

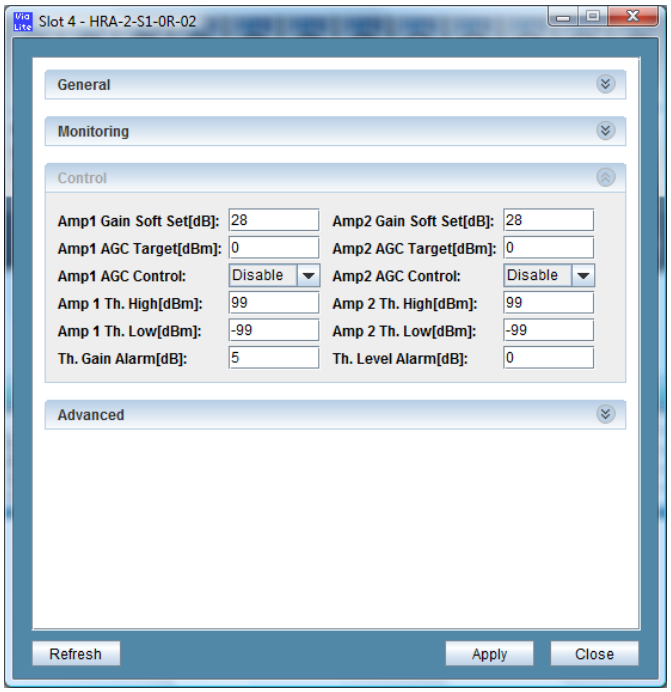
To change the amplifier AGC mode:



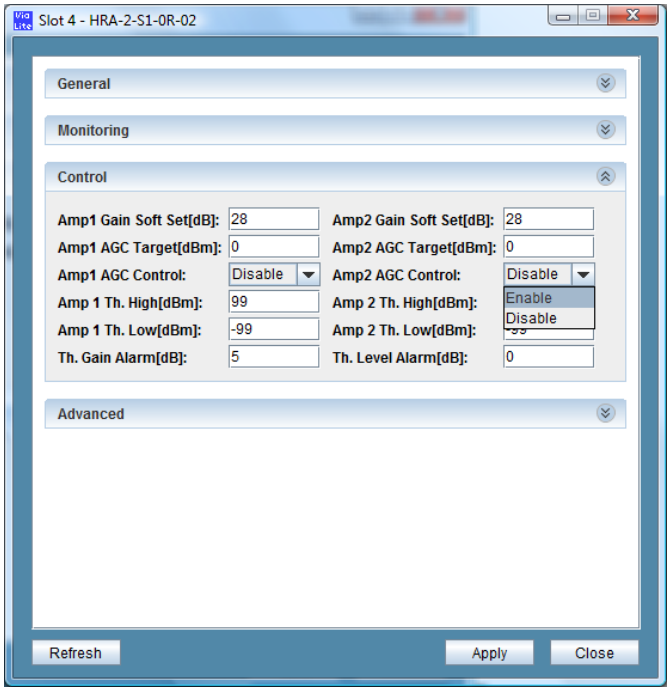
1. Left click on the amplifiers GUI image, this will open the slot window



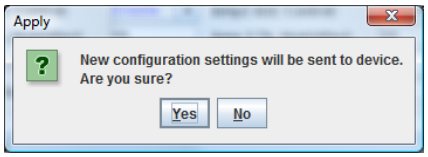
2. Click the arrow on the right of the CONTROL box to maximise this box (you may also minimise the GENERAL box)



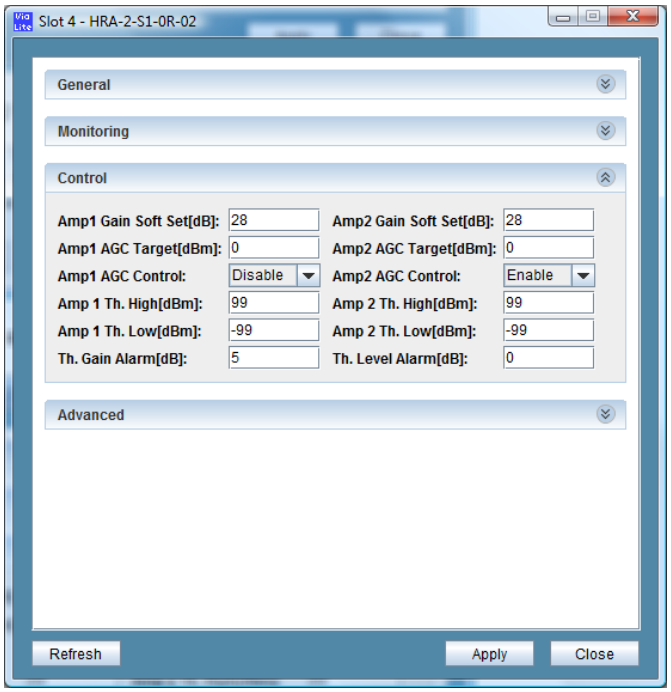
3. Now select the desired mode from the mode pull down menu



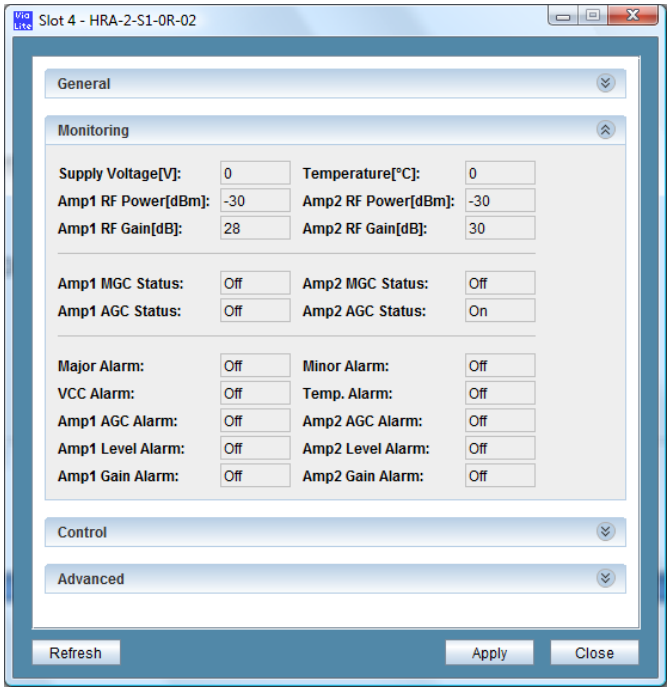
4. After having selected the mode, click on the windows apply button



5. You will be asked to confirm the action, click YES if you are sure



6. The change will take effect on the next polling cycle of the slot

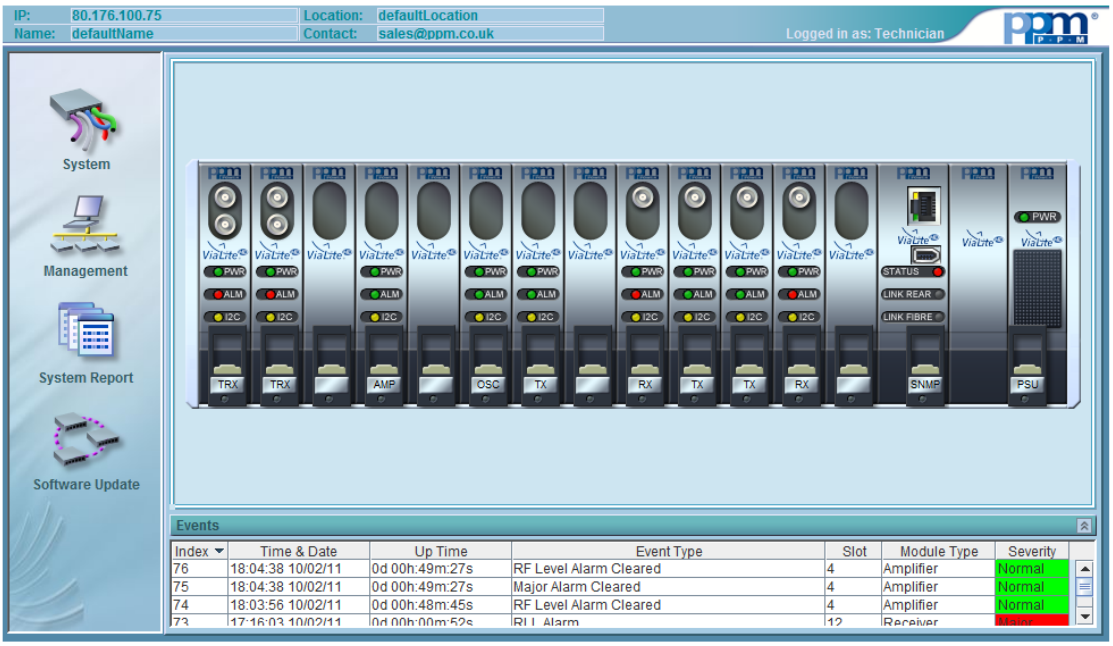


7. You can confirm that the change is in effect by opening the MONITORING box and checking the MODE SETTING

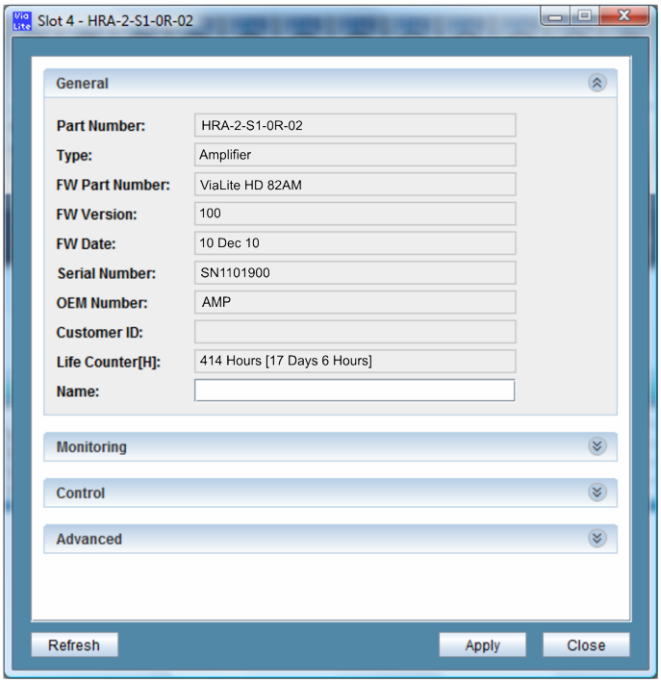
7.9.2.3 Slot windows for Amplifier type, change control values

To change the control values these maybe any of :

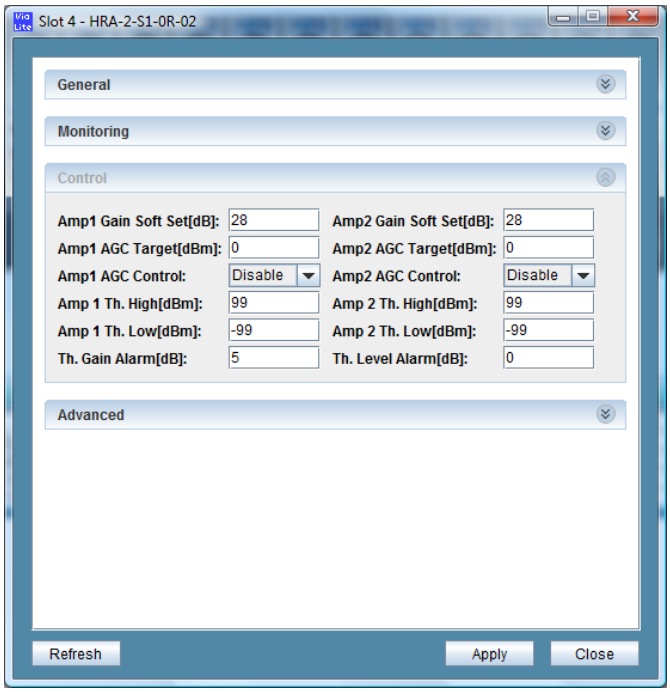
- Amp X Gain soft set
- Amp X AGC target
- Amp X AGC
- Amp X Th High
- Amp X Th low
- Th Gain Alarm
- Th level Alarm.



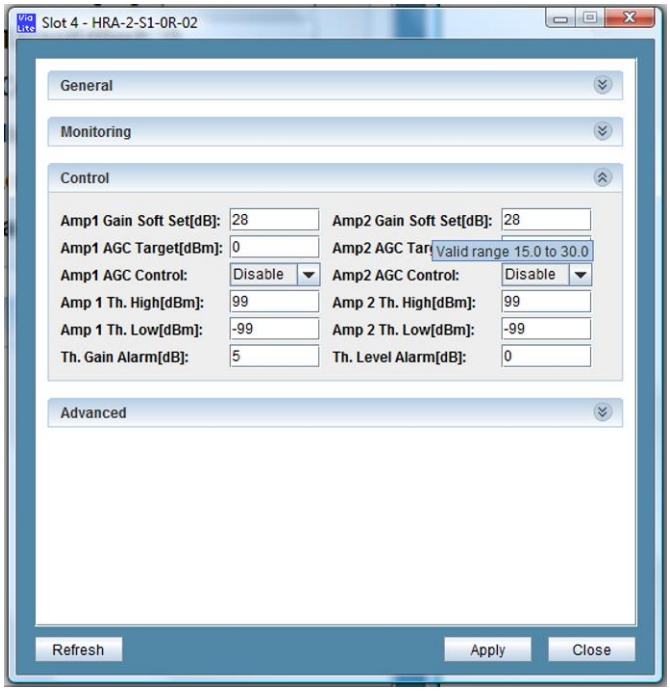
1. Left click on the amplifiers GUI image, this will open the slot window



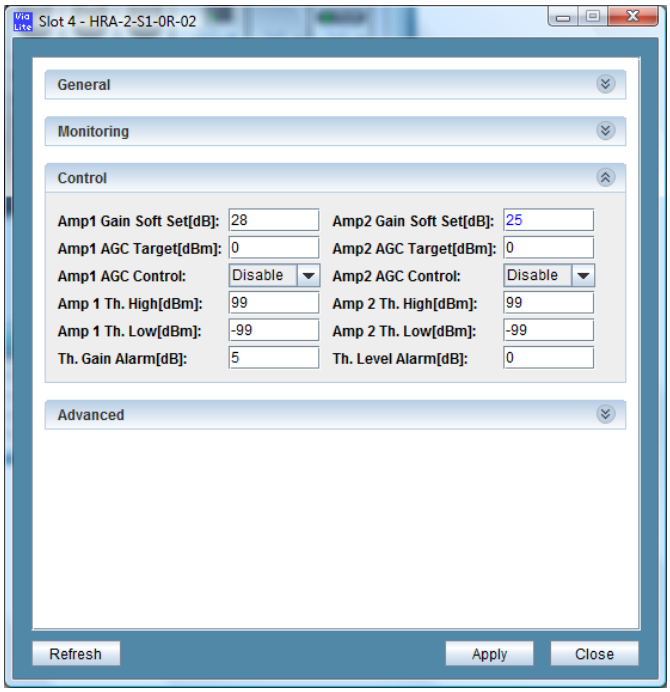
2. Click the arrow on the right of the CONTROL box to maximise this box (you may also minimise the GENERAL box)



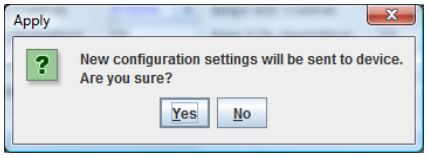
3. You may hover over the box to determine the valid range of values



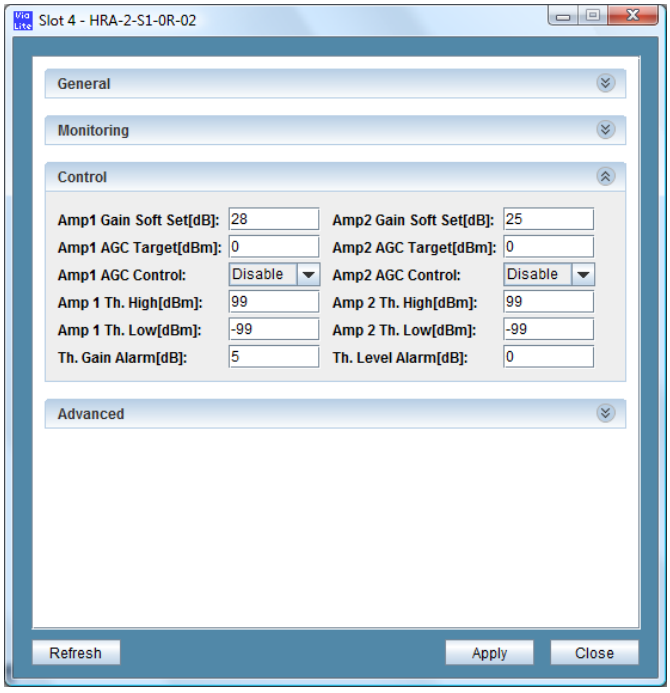
4. Enter the desired value into the box (in this example AMP2 GAIN SOFT SET)



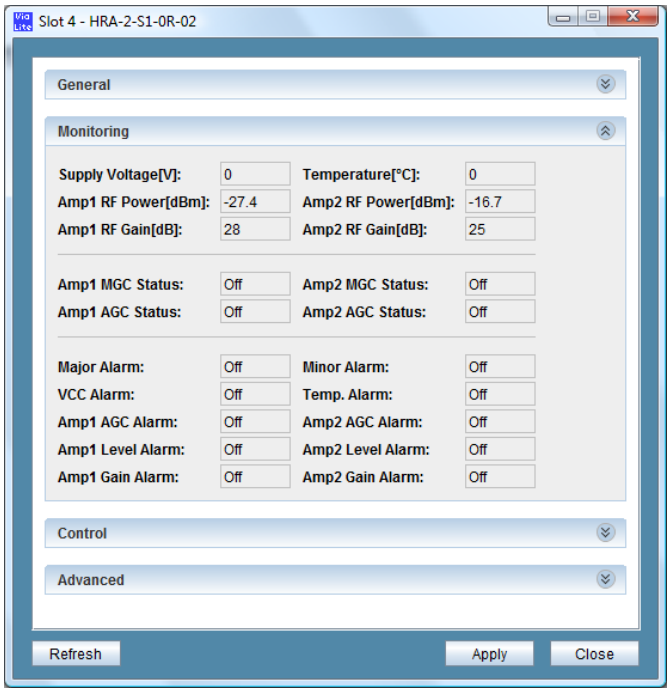
5. After having typed the value, click on the windows APPLY button



6. You will be asked to confirm the action, click YES if you are sure

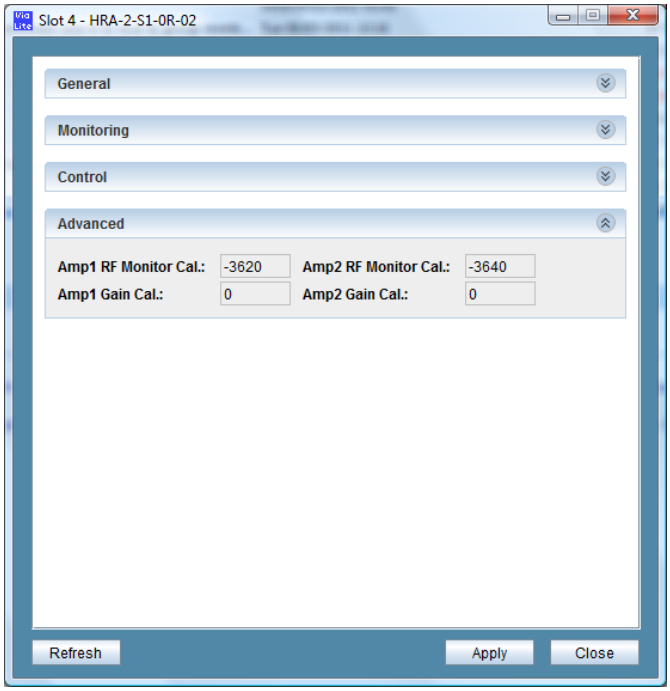


7. The change will take effect on the next polling cycle of the slot



8. You can confirm that the change is in effect by opening the MONITORING box and checking the MODE SETTING

7.9.3 Slot window for Amplifier type, advanced



Slot window – Amplifier type, advanced

Amp X RF monitor cal – This is a factory set calibration value

Amp X gain cal – This is a factory set calibration value

8 System Integration

8.1 Initial set up equipment

For initial set up and programming you will require:

- A computer with serial control port (9 way D type, DB9) running hyper terminal or similar software
- PPM supplied serial interface cable
- A computer with 10/100 ethernet port, running telnet or similar software
- Suitable rack chassis to mount the target SNMP and web controller module, while performing this task

Full set up details are given in section 4 and 5

8.2 Site requirements

The site will require the following services, to make full use of the SNMP and web controllers features:

- A computer with Java enabled web browser to use the web interface

  OR

- Computer running SNMP management package
- Suitable mounting environment for rack chassis
- Power source of rack chassis
- Copper and optical cabling as required, with appropriate interfaces to terminate these to
- LAN unless the module is only to be ONLY locally controlled
- Network identification values that should be allocated by the network administrator are:
  - IP Address for the SNMP and web controller module
  - IP Address for the NMS station
  - Net Mask
  - Gateway Address

8.3 Other considerations, RJ45 interconnection

The SNMP and web controller module is fitted with multiple RJ45 connections and an internal switch. This may therefore be used to:

- Connect to other customer peripheral equipment with ethernet interfaces
- To daisy chain multiple SNMP and web controller modules, reducing the requirement for LAN connections

8.4 Accessing ViaLite HD rack via MIB

The ViaLite HD rack can be located in the MIB tree at OID 1.3.6.1.4.1.31225.1.1.

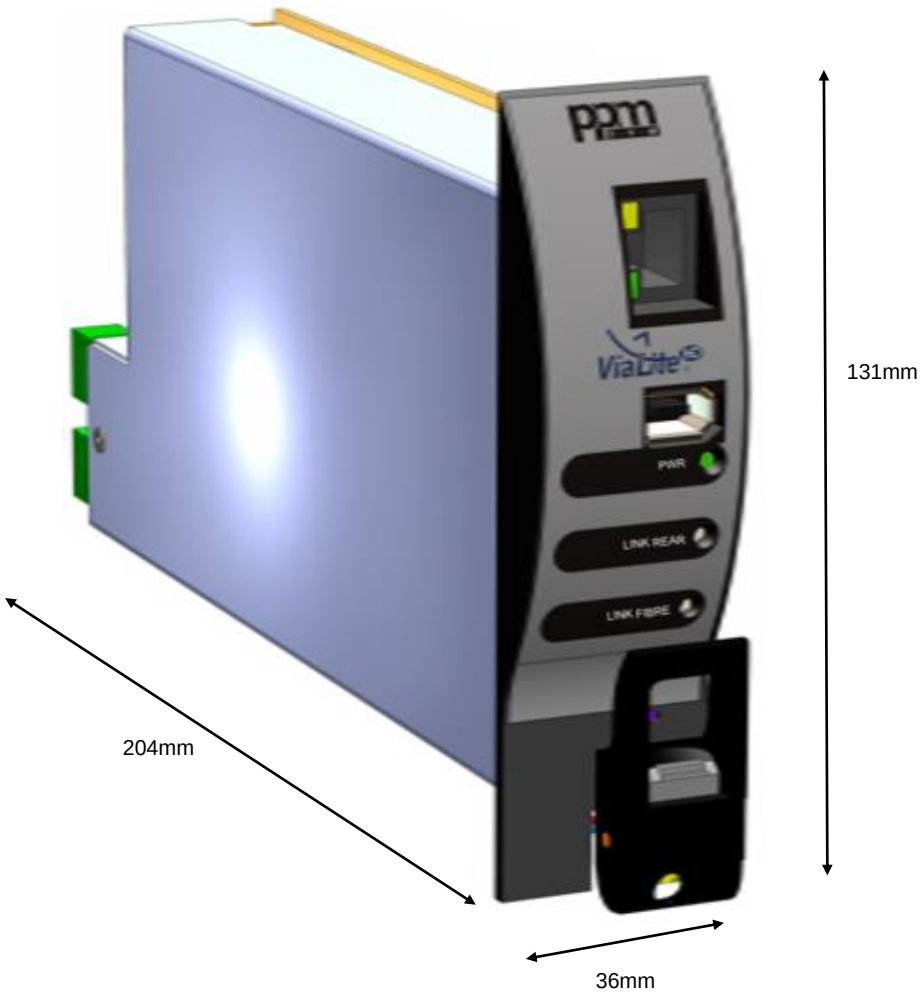
The full path for that OID is iso(1).org(3).dod(6).internet(1).private(4).enterprises(1).ppm(31225).ppmProducts(1).ignis(1).

Refer to the MIB file in order to find more details. The file contains detailed comments explaining the meaning of all parameters along with possible values.

There are 13 slots and any of the slots can support different units either single of dual. In case of optical modules following configurations are available:

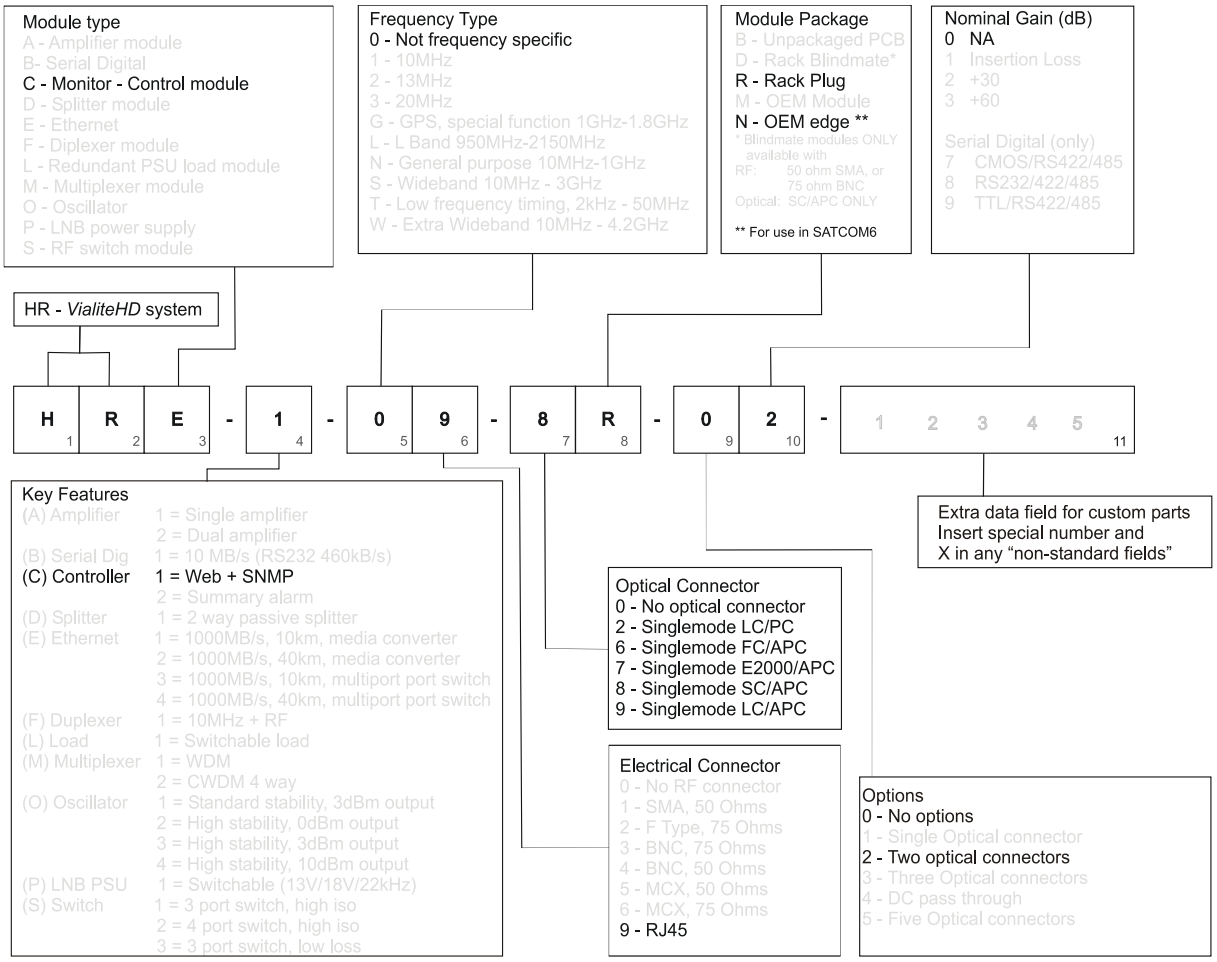
- Single transmitter – use parameters starting with modTx1 to access the unit,
- Single receiver – use parameters starting with modRx1,
- Dual receiver – use modRx1 to access upper receiver and modRx2 for lower one,
- Dual transmitter – use modTx1 to access upper transmitter and modTx2 for lower one,
- Transceiver – use modTx2 to access transmitter and modRx1 to access receiver.
- Single amplifier - use modAmp2 to access the first (input) stage of the amplifier and modAmp1 to access the second (output) stage of the amplifier
- Dual amplifier - use modAmp1 to access the upper amplifier and modAmp2 to access the lower amplifier.

9 Mechanical Dimensions



Weight: 255g Typical

10 Part Numbering


Module type
A - Amplifier module
B- Serial Digital
C - Monitor - Control module
D - Splitter module
E - Ethernet
F - Diplexer module
L - Redundant PSU load module
M - Multiplexer module
O - Oscillator
P - LNB power supply
S - RF switch module
Frequency Type
0 - Not frequency specific
1 - 10MHz
2 - 13MHz
3 - 20MHz
G - GPS, special function 1GHz-1.8GHz
L - L Band 950MHz-2150MHz
N - General purpose 10MHz-1GHz
S - Wideband 10MHz - 3GHz
T - Low frequency timing, 2kHz - 50MHz
W - Extra Wideband 10MHz - 4.2GHz
Module Package
B - Unpackaged PCB
D - Rack Blindmate*
R - Rack Plug
M - OEM Module
N - OEM edge **
* Blindmate modules ONLY available with
RF: 50 ohm SMA, or 75 ohm BNC
Optical: SC/APC ONLY
** For use in SATCOM6
Nominal Gain (dB)
0 NA
1 Insertion Loss
2 +30
3 +60
Serial Digital (only)
7 CMOS/RS422/485
8 RS232/422/485
9 TTL/RS422/485
HR - ViaLiteHD system
H R E - 1 - 0 9 - 8 R - 0 2 - 1 2 3 4 5
1 2 3 4 5 6 7 8 9 10 11
Key Features
(A) Amplifier 1 = Single amplifier
2 = Dual amplifier
(B) Serial Dig 1 = 10 MB/s (RS232 460kB/s)
(C) Controller 1 = Web + SNMP
2 = Summary alarm
(D) Splitter 1 = 2 way passive splitter
(E) Ethernet 1 = 1000MB/s, 10km, media converter
2 = 1000MB/s, 40km, media converter
3 = 1000MB/s, 10km, multiport port switch
4 = 1000MB/s, 40km, multiport port switch
(F) Duplexer 1 = 10MHz + RF
(L) Load 1 = Switchable load
(M) Multiplexer 1 = WDM
2 = CWDM 4 way
(O) Oscillator 1 = Standard stability, 3dBm output
2 = High stability, 0dBm output
3 = High stability, 3dBm output
4 = High stability, 10dBm output
(P) LNB PSU 1 = Switchable (13V/18V/22kHz)
(S) Switch 1 = 3 port switch, high iso
2 = 4 port switch, high iso
3 = 3 port switch, low loss
Optical Connector
0 - No optical connector
2 - Singlemode LC/PC
6 - Singlemode FC/APC
7 - Singlemode E2000/APC
8 - Singlemode SC/APC
9 - Singlemode LC/APC
Electrical Connector
0 - No RF connector
1 - SMA, 50 Ohms
2 - F Type, 75 Ohms
3 - BNC, 75 Ohms
4 - BNC, 50 Ohms
5 - MCX, 50 Ohms
6 - MCX, 75 Ohms
9 - RJ45
Options
0 - No options
1 - Single Optical connector
2 - Two optical connectors
3 - Three Optical connectors
4 - DC pass through
5 - Five Optical connectors
Extra data field for custom parts
Insert special number and
X in any “non-standard fields”

Note: Options relevant to the SNMP module are shown in **DARK** type option in LIGHT type are not available for this module
Not all combinations of options are available. Contact PPM for more details.

11 Technical Specifications

Module function	Controller card with Ethernet switch
Format	Plug in module compatible with ***ViaLiteHD*** rack chassis, 7HP slot
Indicators	Front Panel LED “Power (RED/GREEN)” Front Panel LED “Rear RJ45 LINK (GREEN)” Front Panel LED “Rear Fibre LINK (GREEN)” RJ45 LED each with ACTIVITY (AMBER) and LINK (GREEN)
Electrical signal/power connector	Plug-in module, user accessible via 19” Rack chassis backplane

Operating Conditions

Module operating voltage	+12V ± 0.5V
Module operating voltage and power	4W Typical
Operating temperature	-10°C to +50°C
Storage temperature	-40°C to +70°C
Ambient relative humidity	10% to 95% (Non Condensing)
Maximum weight	300g

Ethernet ports, Copper

Data rate, RJ45 ports	10/100 MB/s (auto negotiating)
Network standards	Fast Ethernet IEEE 802.3u (100BASE-TX)

Ethernet port, Optical

Data rate, fibre port	100 MB/s
Output power	-11dBm typical, Class 1
Wavelength	1310 ± 50nm
Fibre	Singlemode 9/125, Corning SMF28 or equivalent
Optical connector	2 * FC/APC or 2 * SC/APC
Optical path length	0m to 20km for 1310nm, with single-mode fibre
Optical power budget	>10dB (Typical fibre losses: Fibre: 0.4dB/km; Connectors: 0.5dB max.)

Craft port

Connector type	Firewire, 6 circuit connector (IEE1394)
Serial interface cable	Compatible with PPM part number 73706, supplied with each unit
Serial data type	RS232, 9600 bps, 8 data bits, 1 stop bit, no parity, no flow control

Relay

Relay Type	Form C break before make, dry contact, volt free
Relay ports	RELAY_x [1= normally closed, 2=common, 3=normally open] COM (common) Available on rack chassis connector NO (normally open) Available on rack chassis connector NC (normally closed) Available on rack chassis connector
Maximum voltage & current	50V @1A, all voltages are relative to ground
Initial contact resistance	75 mΩ

Software interfaces

SNMP agent	Supports SNMP version 1 and version 2C
MIB	PPM proprietary MIB, RFC1213 compliant, supports MIB-II “system" group

12 Maintenance and Fault-Finding Guide

Refer to the following table that gives a list of commonly encountered problems and suggested solutions.

Fault	Possible Causes	Solution
PWR LED does not light	Power source not connected.	Connect power source.
PWR LED is RED	A connected modules has a major alarm	If this is normal behaviour Fix alarming module
LINK FIBRE LED does not light	Module and remote fibre, not correctly connected Dirty Fibre	Check that Fibres are correctly connected and not swapped Clean Fibres then reconnect
Module not accessible via Ethernet	Ethernet cable not connected Wrong IP settings Module in configuration mode	Connect the Ethernet cable Set right IP values in consultation with your network administrator Disconnect configuration cable, reset the unit
GUI not displayed	Module in configuration mode IP setting not correct Java engine not installed or running PC configuration IP set up incorrect Internal fault	Reset the unit or set to RUN mode via serial Use configured module IP address Install and run Java Correct PC set up Consult local PPM office.

The ***ViaLiteHD*** range is precision engineered and calibrated for optimum performance and accuracy before dispatch.

In the event of any problems or queries arising with the equipment, please contact PPM or your local agent.

13 Glossary

A	Ampere
AGC	Automatic gain control
BUC	Block up converter
CNR	Carrier to noise ratio
COM	Common
dB	Decibel
dBc	Decibel relative to carrier
dBm	Decibel milli watt
DC	Direct current
DHCP	Dynamic host configuration Protocol
DIP	Dual in line (package)
DVB	Digital video broadcast
DVB-T	Digital video broadcast terrestrial
FC/APC	Fibre connector angled polished contact
FC/PC	Fibre connector physical contact
FOL	Fibre optic link
FSK	frequency shift keying
FTP	File transfer protocol
g	Gram
GHz	Giga hertz
GPS	Global positioning system
GRN	Goods Return Number
GUI	Graphical user interface
HRK3	***ViaLiteHD*** 3U rack chassis
HTML	Hypertext mark-up language
HP	Rack hole pitch measurement of width 5.08mm
Hz	Hertz
I2C	Inter-Integrated circuit bus
IMD	Intermodulation distortion ratio
IP	Internet protocol
IP3	Third order intercept point
kg	Kilo gram
kHz	Kilo hertz
LAN	Local area network
LASER	Light amplification by stimulated emission of radiation
LC/PC	Lucent connector physical contact
LED	Light emitting diode
LNA	Low noise amplifier
LNB	Low noise block
m	Metre
mA	Milli ampere
Max	Maximum
MHz	Mega hertz
Min	Minimum
mm	Milli metre
mV	Milli volt
NC	Normally closed
NF	Noise figure
nm	Nano meter
NO	Normally open
P1dB	Power at one decibel gain compression
PC	Personal computer
PPM	Pulse power and measurement Ltd
PWR	Power
RF	Radio frequency
RLL	Received light level
RST	Reset
RX	Receiver
SC/APC	Subscriber connector angled polished contact
SC/PC	Subscriber connector physical contact
SFDR	Spurious free dynamic range
SINAD	Signal to noise and distortion ratio
SNMP	Simple network management protocol
TCP/IP	Transmission Control Protocol
TRX	Transceiver
TX	Transmitter
Typ	Typical
U	Rack units measurement of height 44.45mm
V	Voltage select
VSEL	Voltage select
VSWR	Voltage standing wave ratio
W	Watt

14 Product Warranty

PPM guarantees its products, and will maintain them for a period of three years from the date of shipment and at no cost to the customer. Extended warranty options are available at the time of purchase.

Please note that the customer is responsible for shipping costs to return the module to PPM.

PPM or its agents will maintain its products in full working order and make all necessary adjustments and parts replacements during the Company's normal working hours provided that the Customer will pay at the rates currently charged by the Company for any replacements made necessary by accident, misuse, neglect, wilful act or default or any cause other than normal use.

Claims must be made promptly, and during the guarantee period.

IMPORTANT: -

Please contact both your selling agent and PPM prior to returning any goods for Warranty or Non-Warranty repairs. Goods will not be accepted without a valid Goods Return Number (GRN)

15 FCC Approval

Information to the user of ***ViaLiteHD*** products
For a Class A digital device or peripheral, the following instructions are furnished to the user. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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PPM, 65 SHRIVENHAM HUNDRED BUSINESS PARK, SWINDON, SN6 8TY, UK.
TEL: +44 1793 784389 FAX: +44 1793 784391
EMAIL : SALES@PPM.CO.UK WEBSITE : WWW.VIALITE.COM